
Wisconsin Projections 2000 - 2010

Employment in Industries and Occupations

Prepared by:



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Projections Panel Participants

Special thanks to the following people who served on the Projections Panel. This panel of economists and analysts from government, business, and academia used their expertise to provide a projection of employment in 40 industries. These projections were then pooled together and used as the basis for Wisconsin's industrial employment projections.

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Wisconsin Projections 2000 – 2010

Executive Summary

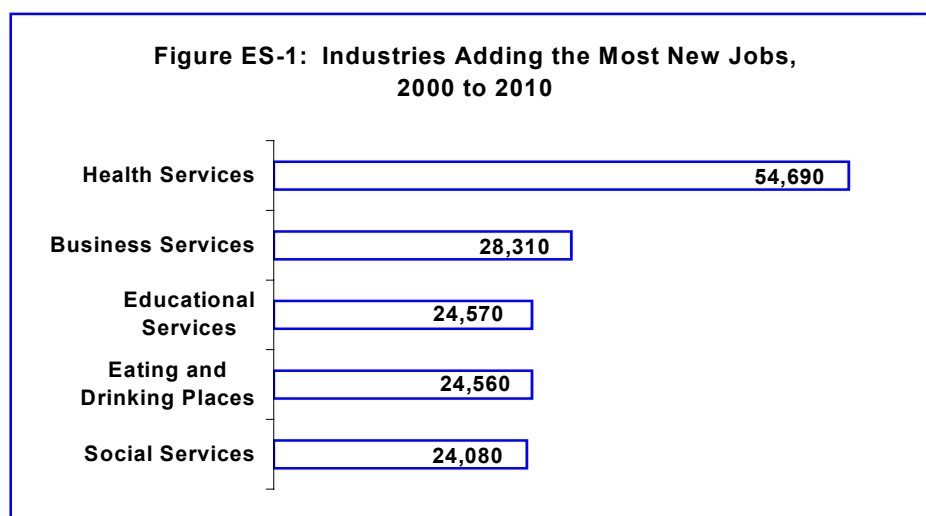
Wisconsin Projections 2000-2010: Employment in Industries and Occupations examines jobs in over 70 industries and 750 occupations. Although Wisconsin's employment has declined the past two years, and there is still uncertainty surrounding the economy, the number of jobs in Wisconsin is expected to grow by 9.6% from 2000 to 2010. With nearly 300,000 new jobs anticipated, the total number of nonfarm jobs is projected to grow from 3.0 to 3.3 million.

A combination of weak domestic and global demand; mergers and consolidations; automation; globalization of operations; and uncertainty surrounding war have caused employment in Wisconsin's manufacturing sector to shrink during the past few years. In 2000 manufacturing employment was 615,700 (using the SIC definition of manufacturing)¹. In 2003 employment is projected to be 569,600. However, this sector is anticipated to gain back some of the jobs lost since 2000 and reach a level of 603,300 jobs by 2010.

The manufacturing industries projected to add the most jobs are lumber and wood products (2,780); furniture and fixtures (2,660), and food and kindred products (1,120). The manufacturing industries expected to lose the most jobs are industrial machinery and equipment (-5,300); primary metal (-2,900); and electronic and other electrical equipment (-2,600).

The services sector will be the job growth leader -- spurred on by the aging of Wisconsin's population, technological innovations in health services and computer services, and continued outsourcing of business functions. With growth of 19% and the addition of over 186,000 positions, services employment is expected to reach a level of 1,154,000 jobs in 2010.

Over 70% of the new jobs in the services sector will be in health, business, educational, or social services. Health, business, educational, and social services will also be responsible for 45% of all new job creation in Wisconsin's economy. (See figure ES-1.)



Information derived from 2001 OES/Wage Survey, 2000 ES-202 and 2000 CES (3/01 Benchmark) data. Unpublished data from the US Bureau of Labor Statistics and US Census Bureau was also used.

Executive Summary

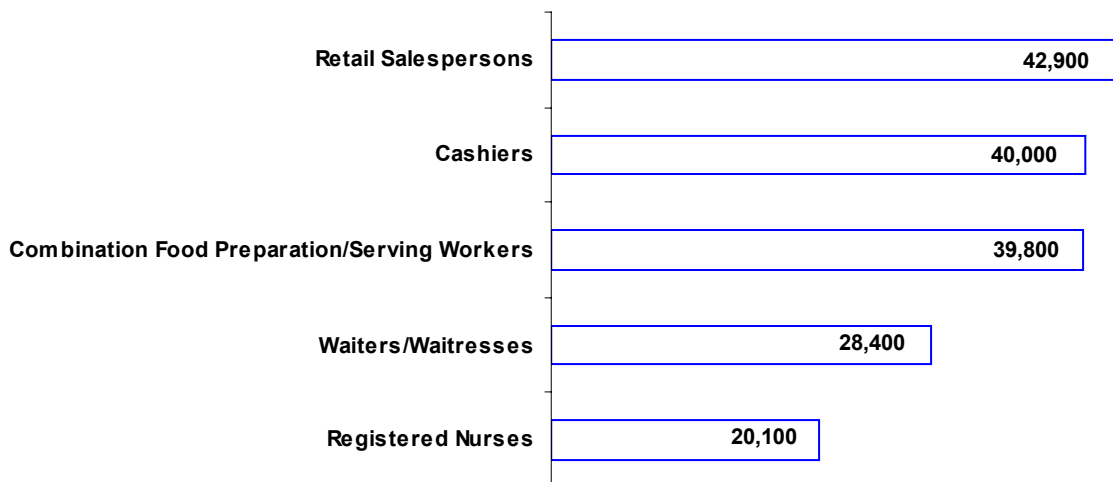
Another sector expected to add numerous jobs is retail trade. Between 2000 and 2010, this sector is projected to grow from 498,700 to 552,900 jobs. Eating and drinking places alone are expected to add 24,600 new jobs. By 2010, employment in this industry will reach a level of nearly 200,000. This increase is expected due to population and tourism growth, and to the likelihood that people will continue to prepare fewer meals at home.

Except for mining (which is expected to lose 250 jobs), the remaining industrial sectors are expected to add about 59,000 jobs during the 2000 to 2010 period. Agricultural services is projected to add 5,200 jobs; construction 11,700; transportation and public utilities 9,400; wholesale trade 9,900; finance, insurance, and real estate 12,800; and government (federal, state, local, and tribal) 10,000. Self-employed workers, who can be in any industry, are projected to grow by 3,100.

During the 2000 to 2010 period, Wisconsin is expected to have nearly 1,012,500 job openings for new entrants into the state's occupations. About 289,800 of these openings will be newly created jobs. The remaining 722,700 openings will result from deaths, retirements, and other permanent exits from various occupations. Openings that result from people changing employers, but staying in the same occupation, are not included in the projections.

The five occupations expected to have the most job openings (see figure ES-2) are retail salespersons (42,900); cashiers (40,000); combined food preparation/serving workers (39,800); waiters/waitresses (28,400), and registered nurses (20,100). The number of job openings for registered nurses is linked to growth in Wisconsin's senior population and to increasing demand for health services. Also, a large number of people are expected to leave the occupation of nursing either to retire or to move on to other careers. The number of openings in the other four occupations are connected both to growth expected in the retail trade and services sectors, as well as the tendency for most people to hold jobs in these occupations for a relatively short period of time.

**Figure ES-2: Occupations with the Most Job Openings
(New Jobs Plus Replacement Openings), 2000 to 2010**



Information derived from 2001 OES/Wage Survey, 2000 ES-202 and 2000 CES (3/01 Benchmark) data. Unpublished data from the US Bureau of Labor Statistics and US Census Bureau was also used.

The five occupations projected to lose the most jobs are cutting, punching, and press machine setters/operators/tenders (-2,300); insurance claims and policy processing clerks (-2,000); order clerks (-1,900); secretaries, except legal, medical, or executive (-1,800); and inspectors, testers, sorters, samplers, and weighers (-1,600). The decline of insurance clerks is attributable both to computerization and to the movement of duties from these specialized clerks to more generalized office clerks. The decline of the four other occupations is linked to the decrease of employment in the manufacturing sector, as well as automation.

Wisconsin Projections also includes information regarding the educational and training requirements typically required in each occupation. Typically required means the most common way people are expected to enter the occupation, although there may be other acceptable education and training. In order to fill all of the 1,012,500 job openings expected, Wisconsin will need people with a wide variety of skills, interests, and educational backgrounds.

Almost eight out of every ten openings (79%) will require less than a bachelor's degree. Over half of the job openings (58%), will require short-term (less than a month) or moderate-term (one to twelve months) on-the-job training. Some examples of occupations in these training categories are cashiers, retail salespersons, and highway maintenance workers.

About 7% of job openings typically require long-term on-the-job training. Long-term training takes more than a year and usually involves a combination of training at the job site and formal classroom instruction. Long-term on-the-job training is often accomplished through an adult apprenticeship program. Occupations in this training category include carpenters, electricians, and dental laboratory technicians.

Another 5% of openings usually require postsecondary vocational training. These formal training programs last from a few weeks to more than a year. Included in this category are cosmetologists, surgical technologists, and real estate assessors.

Work experience in a related occupation will be the general requirement in 5% of job openings. These jobs require skills and experience gained in related positions. Many of these jobs are first-line supervisory positions.

Three percent (3%) of the openings will require an associate degree. This degree requires two years of full-time academic work beyond high school. Examples of occupations requiring this degree are civil engineering technicians, paralegals, and dental hygienists.

The remaining 21% of the job openings will require four or more years of college, or a bachelor's or higher degree in combination with work experience. Computer systems analysts, lawyers, physical therapists, and financial managers all fall into this group.

This edition of *Wisconsin Projections* is divided into two chapters. Chapter 1 focuses on employment in 71 Wisconsin industries. This chapter provides information on which industries will have the largest employment in 2010, and which industries will add the most new jobs, lose the most jobs, and grow the fastest.

Chapter 2 examines employment in 753 occupations. In addition to providing projections for all of these occupations, this chapter identifies the occupations which will have the largest employment in 2010, and which occupations will add the most new jobs, have the most total job openings, lose the most jobs, and grow the fastest. Chapter 2 also details the education and training requirements typically required in each occupation. Wage information is included as well.

Appendix 1 lists each occupation's complete title and is in alphabetic order. This appendix also includes the page number of each occupation's detailed projection. Appendix 2 describes additional resources available for job seekers and employers. Appendix 3 explains the methodology used to develop the industrial and occupational employment projections.

¹ The 2000-2010 industry projections use the Standard Industrial Classification (SIC) system to define industries.

Since 1999, a new system of definitions called the North American Industrial Classification System (NAICS), has been replacing SIC in data sets such as Covered Employment and Wages (CEW or ES-202), Current Employment Statistics (CES), and Occupational Employment Statistics (OES). However not all of the NAICS-based data needed to produce the 2000-2010 projections on a NAICS basis were available at the time the projections were being developed, so SIC definitions were used.

It is important to be aware of differences in SIC and NAICS definitions when comparing the 2000-2010 projections to 2000 or later CEW and CES data.

The 2002-2012 projections will use NAICS definitions.

Other Notes:

To the extent possible, the projections take into account anticipated changes in Wisconsin's economy from 2000 to 2010. It is important to note that unanticipated events may affect the accuracy of these projections.

Source: Office of Economic Advisors, Wisconsin Department of Workforce Development, November 2003.

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Wisconsin Projections 2000 – 2010

Chapter 1: Employment in Industries

OVERVIEW

What is the Employment Outlook for Wisconsin?

This chapter examines jobs in the state's industries. Although Wisconsin's employment has declined the past few years and there is still uncertainty surrounding the economy, the number of jobs in Wisconsin is expected to grow by 9.6% from 2000 to 2010. With 289,780 new jobs anticipated, the total number of jobs is projected to grow from 3,011,380 to 3,301,160.

What is the Difference between an Industry and an Occupation?

An industry is a distinct group of businesses. Some examples of industries are furniture stores, electronic equipment manufacturers, and general building contractors.

An occupation describes the type of work a person does. Some examples of occupations are carpenters, truck drivers, and retail salespersons.

Some industries, such as hospitals and local government, employ people in a wide variety of occupations. Other industries, such as non-metallic mineral mining and restaurants, employ people in relatively few occupations.

Likewise, some occupations, such as secretaries and general office clerks, are found in almost every industry. Other occupations, such as roofers and bookbinders, are found in only a few industries.

How are Businesses Classified?

Businesses are classified according to the primary type of good or service produced. In this publication, industries are organized by Standard Industrial Classification (SIC) codes.¹ Employment data are presented for nine major industry divisions and 71 major industry groups.

What Factors Affect Industry Employment?

Industry employment is influenced by the following factors:

1. Domestic and global demand for products and services.
2. Cost and availability of labor.
3. Cost and ease of substituting capital for labor.
4. Technological change.
5. Other factors such as government subsidies, regulations, public acceptance, and taxes.

The analysis that follows briefly describes how these factors are affecting employment in particular industries.

OVERVIEW (continued)

What Information is Available about Industry Employment in this Book?

The relative importance of employment in Wisconsin's industries is examined using four criteria. These criteria are:

- 2000 Employment

The estimated number of jobs in the industry in 2000.

- 2010 Employment

The projected number of jobs in the industry in 2010.

- Change

The difference in the number of jobs between 2000 and 2010. A positive number means employment is growing due to the creation of new jobs. A negative number indicates employment is declining in the industry.

- Percent Change

An indication of how fast employment is expected to increase or decrease from 2000 to 2010. The larger the positive percent change, the faster employment is growing. Likewise, the larger the negative percent change, the faster employment is declining.

This chapter first examines employment in nine major industry divisions. Second, employment is broken down into 71 industry groups. Among these 71 industries, the ones with the largest employment in 2010, adding the most jobs, growing the fastest, and experiencing the greatest employment declines are analyzed. Third, historical employment and anticipated trends are examined for a group of selected industries.

EMPLOYMENT BY MAJOR INDUSTRY DIVISION

Wisconsin industries are grouped together into nine major industry divisions (see figure 1-1). These divisions are

- Agricultural Services
- Mining
- Construction
- Manufacturing
- Transportation and Public Utilities
- Wholesale and Retail Trade
- Finance, Insurance, and Real Estate
- Services
- Government

Also included in figure 1-1 are data for self-employed and unpaid family workers. People in this group may work in any industry. However, the data used for these workers are collected on an occupational, rather than industry basis, so an industry breakdown is not available. Employment in this group is included in order to get a fuller picture of total employment in Wisconsin.

EMPLOYMENT BY MAJOR INDUSTRY DIVISION (continued)

Self-employed workers are defined as owners of nonfarm, unincorporated businesses who rely on their firms' profits for their main source of income.

People who earn most of their income from a nonfarm wage or salary job and who also own an unincorporated business are not included as self-employed. The jobs these people hold are counted in the industry where they are primarily employed.

In addition, people who are owners of nonfarm, incorporated businesses are not included as self-employed. This employment is counted in the industry in which the corporation falls.

Unpaid family workers are people who work unpaid for at least fifteen hours a week in a family owned, nonfarm, business.

Figure 1-1: Employment by Major Industry Division, 2000 to 2010				
Industry Title	2000 Estimated Employment	2010 Projected Employment	2000-2010 Employment Change	2000-2010 Percent Change
Total, All Industries ⁽¹⁾	3,011,380	3,301,160	289,780	9.6%
Agricultural Services (SIC 07 only)	15,680	20,860	5,180	33.0%
Mining	2,750	2,500	(250)	-9.1%
Construction	124,070	135,800	11,730	9.5%
Manufacturing	615,740	603,310	(12,430)	-2.0%
Transportation and Public Utilities ⁽²⁾	149,600	159,030	9,430	6.3%
Wholesale and Retail Trade	637,330	701,400	64,070	10.1%
Finance, Insurance, and Real Estate	148,080	160,890	12,810	8.7%
Services ⁽³⁾	967,950	1,154,350	186,400	19.3%
Government ⁽⁴⁾	177,580	187,600	10,020	5.6%
Self-Employed and Unpaid Family ⁽⁵⁾	172,600	175,430	3,140	1.8%
<p>⁽¹⁾Includes self-employed and unpaid family worker employment.</p> <p>⁽²⁾Includes U.S. Postal Service.</p> <p>⁽³⁾Includes state and local government employment in education and hospitals, and private household employment.</p> <p>⁽⁴⁾Excludes state and local government employment in education and hospitals, and U.S. Postal Service</p> <p>⁽⁵⁾Self-employed and unpaid family worker employment can occur in any industry, but for projections purposes is treated separately.</p> <p>Employment derived using data from 2000 Current Employment Statistics (2001 Benchmark), 2000 Covered Employment and Wages, and unpublished data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau.</p> <p>Employment rounded to nearest 10.</p> <p>Totals may not add due to rounding.</p> <p>Source: Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development</p>				

EMPLOYMENT BY MAJOR INDUSTRY DIVISION (continued)

Services Dominate

The services division will dominate employment from 2000 to 2010. With nearly 968,000 jobs, this group had the most employment in 2000. Services will remain the employment leader in 2010, when this group is expected to have over 1,150,000 jobs. Also during the ten year period, services are expected to account for over 60% of job creation, with the addition of just over 186,000 new jobs. Services employment will be spurred on by the aging of Wisconsin's population, technological innovations in health and computer services, and continued outsourcing of functions and positions by businesses.

Wholesale and Retail Trade Employment Moves into Second Place

In 1999, wholesale and retail trade employment overtook manufacturing employment for the first time. Throughout the next decade, the employment gap between trade and manufacturing is expected to widen.

Trade had over 637,000 jobs in 2000 and is projected to grow to about 701,000 jobs by 2010. In 2010, this industry group will account for one out of every five jobs in Wisconsin. This division is also expected to add the second largest number of new jobs, with just over 64,000.

In wholesale trade, employment is expected to grow largely due to strong demand for medical and office equipment and supplies. In retail trade, employment in restaurants will continue to expand due to population growth, tourism, and people's ongoing struggle with time demands which prompts them to buy meals prepared outside the home. Also, consumer demand is expected to keep employment growing in other retail establishments such as general merchandise stores and mail-order businesses.

Manufacturing Employment is Third, but Still Important

In 2000, the manufacturing division had the third largest proportion of jobs with 20% of the total, or just under 616,000 jobs. By 2010 manufacturing is expected to remain in third place, with 18% of employment and about 603,000 jobs. This division is expected to lose about 12,000 jobs between 2000 and 2010.

A combination of weak domestic and global demand; mergers and consolidations; automation; globalization of operations; and uncertainty surrounding war have caused employment in Wisconsin's manufacturing sector to shrink during the past few years. The ability of jobs to rebound from this decline will continue to be dependent on these factors.

Manufacturing employment will also continue to be affected by the use of temporary workers to deal with shifts in product demand. Temporary workers are often employees of a personnel supply service, instead of a manufacturer. As a result of the use of temporary workers, "manufacturing" employment is actually being shifted from the manufacturing to the services division.

LARGEST INDUSTRIES

Employment in the nine major industry divisions is further subdivided among 71 major industry groups based on two-digit Standard Industrial Classification codes. Detailed employment data for 2000 and projected 2010 is found in figure 1-44 at the end of this chapter.

In the following sections, the focus will be on industries with the largest employment, adding the most new jobs, growing the fastest, and losing the most jobs.

LARGEST INDUSTRIES (continued)

Figure 1-2 lists the thirty Wisconsin industries expected to have the most jobs in 2010. In 2010, these industries are projected to have 2.61 million jobs, or 79% of the total jobs in Wisconsin's economy.

The top ten industries alone are expected to account for 47% of the total jobs in 2010 and 64% of new jobs between 2000 and 2010.

The top three industries -- Health Services, Educational Services, and Eating and Drinking Places -- are expected to account for 23% of total jobs in 2010. Moreover, these industries are expected to account for over one of every three new jobs during the decade.

Health services employment is being spurred by the aging of Wisconsin's population and technological innovations. This industry is expected to add almost 55,000 jobs and reach a level of nearly 290,000 jobs by 2010. As a result, more doctors, nurses, therapists, technologists, and administrative support workers will be needed to perform all of the tasks related to providing health care.

Educational services is projected to be the second largest industry in 2010 with about 270,000 jobs. Between 2000 and 2010, employment in this industry is expected to grow by about 10%, which is about the same as the economy as a whole. The occupations expected to have the most job openings are secondary school teachers and teachers' assistants.

The educational services industry is facing conflicting demands to provide more specialized services and yet restrain employment growth. There are pressures on elementary, middle, and secondary schools to decrease class sizes and offer more services to students with special needs. Technical schools, colleges and universities are experiencing increasing demand for classes both from traditional students and adults returning to upgrade their knowledge and skills. At the same time, schools at all levels are facing financial constraints which are forcing them to decide which services and classes to provide and which to omit.

By 2010, employment in eating and drinking places is expected to reach almost 200,000. Expansion in this industry is being driven by population and tourism growth, and people preparing fewer meals at home.

INDUSTRIES ADDING THE MOST NEW JOBS

The thirty industries creating the most new jobs are illustrated in figure 1-3. This set of industries is expected to create nearly 300,000 jobs between 2000 and 2010. Almost all (94%) of new job creation will be among these industries. The top ten industries alone are expected to generate two out of every three new jobs.

Health services, business services, and educational services are expected to lead the way in creating new jobs. These three industries are projected to add nearly 108,000 positions, accounting for 34% of all new jobs.

As mentioned in the previous section, health services employment is growing due to the health care needs of Wisconsin's aging population, as well as new medical treatments and procedures. This industry is expected to add almost 55,000 jobs by 2010. The occupations projected to add the most new jobs are registered nurses; nursing aides, orderlies, and attendants; and medical assistants.

Business services is expected to add about 28,000 new jobs. This industry provides services to other businesses on a contract or fee basis. Some examples of services provided are advertising; computer and data processing; telemarketing; personnel supply services; and janitorial services. Demand for services in this industry is expected to remain strong as businesses continue to re-define or limit their core operations and outsource other functions. The occupations projected to add the most new jobs are computer systems analysts, security guards, and janitors.

Figure 1-2: Thirty Largest Industries, Ranked by Projected 2010 Employment

SIC Code	Industry Title	2000 Estimated Employment	2010 Projected Employment	2000-2010 Employment Change	2000-2010 Percent Change
80	Health Services ⁽¹⁾	233,240	287,930	54,690	23.4%
82	Educational Services ⁽¹⁾	245,780	270,350	24,570	10.0%
58	Eating and Drinking Places	173,380	197,940	24,560	14.2%
73	Business Services	152,990	181,300	28,310	18.5%
93	Local Government, ex. Education & Hospitals ^{(1), (2)}	126,080	135,000	8,920	7.1%
35	Industrial Machinery and Equipment	109,410	104,100	(5,310)	-4.9%
83	Social Services	76,420	100,500	24,080	31.5%
17	Special Trade Contractors	81,110	88,850	7,740	9.5%
50	Wholesale Trade, Durable Goods	80,850	86,960	6,110	7.6%
86	Membership Organizations	74,740	86,860	12,120	16.2%
59	Miscellaneous Retail Stores	73,760	85,760	12,000	16.3%
53	General Merchandise Stores	66,360	71,500	5,140	7.7%
54	Food Stores	65,150	68,400	3,250	5.0%
20	Food & Kindred Products	67,180	68,300	1,120	1.7%
34	Fabricated Metal Products	67,790	65,600	(2,190)	-3.2%
55	Auto Dealers & Service Stations	58,560	64,300	5,740	9.8%
51	Wholesale Trade, Nondurable Goods	57,740	61,540	3,800	6.6%
42	Trucking and Warehousing	53,590	57,370	3,780	7.1%
27	Printing & Publishing	54,690	53,400	(1,290)	-2.4%
63	Insurance Carriers	48,600	53,200	4,600	9.5%
87	Engineering & Management Services	40,650	52,750	12,100	29.8%
26	Paper & Allied Products	52,250	50,800	(1,450)	-2.8%
60	Depository Institutions	43,230	45,000	1,770	4.1%
36	Electronic & Other Electrical Equipment	46,700	44,100	(2,600)	-5.6%
79	Amusement & Recreation Services	31,070	42,790	11,720	37.7%
30	Rubber & Miscellaneous Plastics Products	39,180	40,000	820	2.1%
70	Hotels & Other Lodging Places	30,770	36,600	5,830	18.9%
92	State Government, ex. Education & Hospitals ⁽¹⁾	34,890	36,000	1,110	3.2%
24	Lumber and Wood Products	32,220	35,000	2,780	8.6%
15	General Building Contractors	30,360	33,090	2,730	9.0%

⁽¹⁾State and local government employment in education and hospitals is removed and included with Educational Services (SIC 82) and Health Services (SIC 80).

⁽²⁾Local government includes tribal owned operations.

Employment rounded to nearest 10.

Numbers may not add due to rounding.

Employment derived using data from 2000 Current Employment Statistics (2001 Benchmark), 2000 Covered Employment and Wages, and unpublished data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau.

Source: Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development

Figure 1-3: Thirty Industries Adding the Most New Jobs, 2000 to 2010

SIC Code	Industry Title	2000 Estimated Employment	2010 Projected Employment	2000-2010 New Jobs	2000-2010 Percent Change
80	Health Services ⁽¹⁾	233,240	287,930	54,690	23.4%
73	Business Services	152,990	181,300	28,310	18.5%
82	Educational Services ⁽¹⁾	245,780	270,350	24,570	10.0%
58	Eating and Drinking Places	173,380	197,940	24,560	14.2%
83	Social Services	76,420	100,500	24,080	31.5%
86	Membership Organizations	74,740	86,860	12,120	16.2%
87	Engineering & Management Services	40,650	52,750	12,100	29.8%
59	Miscellaneous Retail Stores	73,760	85,760	12,000	16.3%
79	Amusement & Recreation Services	31,070	42,790	11,720	37.7%
93	Local Government, ex. Education & Hospitals ^{(1), (2)}	126,080	135,000	8,920	7.1%
17	Special Trade Contractors	81,110	88,850	7,740	9.5%
75	Auto Repair Services and Parking	22,040	28,540	6,500	29.5%
50	Wholesale Trade, Durable Goods	80,850	86,960	6,110	7.6%
70	Hotels & Other Lodging Places	30,770	36,600	5,830	18.9%
55	Auto Dealers & Service Stations	58,560	64,300	5,740	9.8%
07	Agricultural Services	15,680	20,860	5,180	33.0%
53	General Merchandise Stores	66,360	71,500	5,140	7.7%
63	Insurance Carriers	48,600	53,200	4,600	9.5%
81	Legal Services	13,850	17,760	3,910	28.2%
51	Wholesale Trade, Nondurable Goods	57,740	61,540	3,800	6.6%
42	Trucking and Warehousing	53,590	57,370	3,780	7.1%
54	Food Stores	65,150	68,400	3,250	5.0%
72	Personal Services	26,170	29,310	3,140	12.0%
24	Lumber and Wood Products	32,220	35,000	2,780	8.6%
15	General Building Contractors	30,360	33,090	2,730	9.0%
25	Furniture and Fixtures	18,640	21,300	2,660	14.3%
41	Local and Interurban Transit	15,920	18,520	2,600	16.3%
57	Furniture & Homefurnishings Stores	19,210	21,780	2,570	13.4%
65	Real Estate	20,270	22,760	2,490	12.3%
52	Building Materials & Garden Supplies	26,140	28,280	2,140	8.2%

⁽¹⁾State and local government employment in education and hospitals is removed and included with Educational Services (SIC 82) and Health Services (SIC 80).

⁽²⁾Local government includes tribal owned operations.

Employment rounded to nearest 10.

Numbers may not add due to rounding.

Employment derived using data from 2000 Current Employment Statistics (2001 Benchmark), 2000 Covered Employment and Wages, and unpublished data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau.

Source: Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development

INDUSTRIES ADDING THE MOST NEW JOBS (continued)

Educational services is projected to grow by almost 26,000 jobs. As stated previously, this industry is facing pressures to expand specialized services while at the same time restrain employment and budget growth. The occupations expected to grow the most are teacher assistants; secondary school teachers, except special or vocational education; and elementary school teachers, except special education.

FASTEST GROWING INDUSTRIES

Wisconsin's thirty fastest growing industries are listed in figure 1-4. The rankings are based on percentage increases in employment between 2000 and 2010. The larger the percentage increase, the faster the industry is growing. Only industries with projected 2010 employment of at least 500 are included in the list.

In addition to being the fastest growing, these thirty industries are projected to create 92% of all new jobs, or 267,450 jobs, between 2000 and 2010. Also, these industries are projected to account for 55%, or about 1.8 million, of the state's jobs in 2010.

The three fastest growing industries are services, not elsewhere classified; amusement and recreation services; and agricultural services.

Services, not elsewhere classified, include independent science consultants (physicists, chemists, geologists, etc.), artists, authors, lecturers, inventors, song writers, commentators, and weather forecasters. This industry is relatively small with employment projected to increase from 440 to 630. However, the industry's growth rate of 43% is expected to top all other industries. A large portion of the growth in this industry is attributable to businesses contracting with outside specialists to provide expertise on various projects.

With the addition of nearly 12,000 jobs, amusement and recreation services is expected to grow by 38% during 2000 to 2010. Increasing interest in live theatrical and musical performances, commercial sports, physical fitness facilities, golf courses, and miscellaneous tourist attractions is contributing to growth in this industry.

Agricultural services employment is projected to increase by 33%. This industry is expected to gain nearly 5,200 jobs, and grow from about 16,000 to almost 21,000. The two segments prompting most of the growth in this industry are veterinary services and landscape services. The increase in the number of pet owners, enhancements in veterinary care, and pet owners' desire to provide the best care possible for their pets are expected to contribute to the demand for veterinary services. Employment in landscape and horticultural services is expected to remain strong due to businesses and home owners outsourcing the care of lawns, gardens, and grounds.

DECLINING INDUSTRIES

There are nineteen Wisconsin industries expected to experience a net loss of employment between 2000 and 2010 (see figure 1-5). Overall these industries will lose about 26,400 jobs.

The industry projected to lose the most jobs is industrial machinery and equipment. Between 2000 and 2010 this industry is projected to lose 5,310 jobs. Employment has been declining in this industry since its 1998 employment level of 115,000 jobs. In 2010, the industry is expected to have 104,100 jobs. The primary customers for the machinery produced in this industry are other manufacturing industries. Many of these customers, such as those in the textile, paper, and printing industries, have been facing consolidations and weak demand for their own products. As a result, demand for new industrial machinery has weakened.

Leather and leather products continues to be the industry experiencing the fastest decline. Between 2000 and 2010 employment is projected to fall from 3,500 to 1,600, for a drop of 54%. Employment has steadily declined in this industry since its 1956 level of 18,000 jobs. This industry is continuing to face global competition and consolidation.

Figure 1-4: Thirty Fastest Growing Industries, 2000 to 2010

SIC Code	Industry Title	2000 Estimated Employment	2010 Projected Employment	2000-2010 Employment Change	2000-2010 Percent Change
89	Services, Not Elsewhere Classified	440	630	190	43.2%
79	Amusement & Recreation Services	31,070	42,790	11,720	37.7%
07	Agricultural Services	15,680	20,860	5,180	33.0%
83	Social Services	76,420	100,500	24,080	31.5%
84	Museums, Botanical, Zoological Gardens	1,420	1,850	430	30.3%
87	Engineering & Management Services	40,650	52,750	12,100	29.8%
75	Auto Repair Services and Parking	22,040	28,540	6,500	29.5%
81	Legal Services	13,850	17,760	3,910	28.2%
47	Transportation Services	6,510	8,130	1,620	24.9%
80	Health Services	233,240	287,930	54,690	23.4%
70	Hotels & Other Lodging Places	30,770	36,600	5,830	18.9%
73	Business Services	152,990	181,300	28,310	18.5%
41	Local and Interurban Transit	15,920	18,520	2,600	16.3%
59	Miscellaneous Retail Stores	73,760	85,760	12,000	16.3%
86	Membership Organizations	74,740	86,860	12,120	16.2%
67	Holding & Other Investment Offices	4,550	5,280	730	16.0%
62	Security & Commodity Brokers	8,240	9,450	1,210	14.7%
25	Furniture and Fixtures	18,640	21,300	2,660	14.3%
58	Eating and Drinking Places	173,380	197,940	24,560	14.2%
57	Furniture & Homefurnishings Stores	19,210	21,780	2,570	13.4%
65	Real Estate	20,270	22,760	2,490	12.3%
72	Personal Services	26,170	29,310	3,140	12.0%
45	Transportation by Air	13,990	15,550	1,560	11.2%
16	General Contractors, Except Building	12,600	13,860	1,260	10.0%
82	Educational Services	245,780	270,350	24,570	10.0%
55	Auto Dealers & Service Stations	58,560	64,300	5,740	9.8%
17	Special Trade Contractors	81,110	88,850	7,740	9.5%
63	Insurance Carriers	48,600	53,200	4,600	9.5%
15	General Building Contractors	30,360	33,090	2,730	9.0%
61	Nondepository Institutions	6,930	7,540	610	8.8%

Employment rounded to nearest 10.

Numbers may not add due to rounding.

Employment derived using data from 2000 Current Employment Statistics (2001 Benchmark), 2000 Covered Employment and Wages, and unpublished data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau.

Source: Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development

Figure 1-5: Declining Industries, 2000 to 2010

SIC Code	Industry Title	2000 Estimated Employment	2010 Projected Employment	2000-2010 Employment Change	2000-2010 Percent Change
35	Industrial Machinery and Equipment	109,410	104,100	(5,310)	-4.9%
33	Primary Metal Industries	26,170	23,300	(2,870)	-11.0%
36	Electronic & Other Electrical Equipment	46,700	44,100	(2,600)	-5.6%
37	Transportation Equipment	34,240	31,800	(2,440)	-7.1%
34	Fabricated Metal Products	67,790	65,600	(2,190)	-3.2%
31	Leather & Leather Products	3,500	1,600	(1,900)	-54.3%
88	Private Households	5,540	4,000	(1,540)	-27.8%
26	Paper & Allied Products	52,250	50,800	(1,450)	-2.8%
27	Printing & Publishing	54,690	53,400	(1,290)	-2.4%
40	Railroad Transportation	3,770	2,490	(1,280)	-34.0%
56	Apparel and Accessories Stores	16,170	14,930	(1,240)	-7.7%
23	Apparel and Textile Products	5,810	5,000	(810)	-13.9%
38	Instruments and Related Products	17,730	17,300	(430)	-2.4%
22	Textile Mill Products	2,410	2,000	(410)	-17.0%
884 ⁽¹⁾	Unpaid Family Workers	2,200	1,890	(310)	-14.1%
14	Nonmetallic Minerals, Except Fuels	2,720	2,480	(240)	-8.8%
29	Petroleum and Coal Products	430	400	(30)	-7.0%
46	Pipe Lines, Except Natural Gas	120	90	(30)	-25.0%
91	Federal Government ⁽²⁾	16,620	16,600	(20)	-0.1%

⁽¹⁾This code is used for occupational projection purposes. This code includes all family members who work unpaid in family-owned businesses, regardless of the industry.

⁽²⁾Postal Service employment is taken out of Federal Government employment and is shown as SIC 43.

Employment is rounded to the nearest ten.
Numbers may not add due to rounding.

Employment derived using data from 2000 Current Employment Statistics (2001 Benchmark), 2000 Covered Employment and Wages, and unpublished data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau.

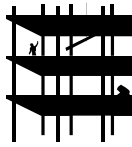
Source: Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development

HISTORICAL EMPLOYMENT TRENDS AND PROJECTIONS FOR SELECTED INDUSTRIES

This section provides graphs of historical employment data from 1954 to 2000, and 2010 projected employment, for selected industries and groupings of industries. A brief description of the industries and expected employment trends is also included.

The information is presented in the following order:

- A. Construction
- B. Manufacturing
 - 1. Durable Goods Manufacturing
 - a. Primary Metal Industries
 - b. Fabricated Metal Products
 - c. Industrial and Commercial Machinery, and Computer Equipment
 - d. Electronic and Electrical Equipment
 - e. Transportation Equipment
 - f. Instruments and Related Products
 - 2. Nondurable Goods Manufacturing
 - a. Food and Kindred Products
 - b. Paper and Allied Products
 - c. Printing and Publishing
 - d. Rubber and Miscellaneous Plastic Products
- C. Transportation, Communications, and Public Utilities
- D. Wholesale and Retail Trade
- E. Finance, Insurance, and Real Estate
- F. Services
- G. Federal, State, and Local Government



Construction, SIC 15-17

**Figure 1-6:
Construction Employment Outlook**

Average Employment 1954-2000	Estimated Employment 2000	Projected Employment 2010	2000-2010 New Jobs	2000-2010 % Change for this Industry	2000-2010 % Change Across all Industries
72,300	124,070	135,800	11,730	9.5%	9.6%

Data Series: Current Employment Statistics, 2001 Benchmark; 2000-2010 Wisconsin Projections
Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors
Wisconsin Department of Workforce Development

Description

Construction includes residential and nonresidential building construction; road, bridge, and other heavy construction; and special trade contractors such as plumbers, painters, carpenters, and electricians.

Two-thirds of Wisconsin's construction employment is among special trade contractors. General building contractors account for 24% of employment. Heavy construction contractors, other than building contractors, comprise the remaining 10%.

Past, Present, and Future Employment

As illustrated in figure 1-7, construction employment increased at a steep rate between 1982 and 2000. In 1982, construction employment was 56,900. By 2000, employment more than doubled to nearly 124,100. Employment is expected to reach a level of nearly 136,000 by 2010.

Factors Affecting Employment

Employment growth in this industry is dependent upon population growth; increasing household and business incomes; and low unemployment, interest rates, and inflation. During 2000 to 2010, population growth is expected to slow while interest rates slightly increase. At the same time, statewide unemployment is expected to remain in the 4-6% range. Inflation levels are expected to remain low, while household and business incomes moderately increase. As a result of the combination of these factors, construction employment is expected to grow at about the same pace as Wisconsin as a whole.

Occupations Adding the Most New Jobs (2000-2010 Increase)

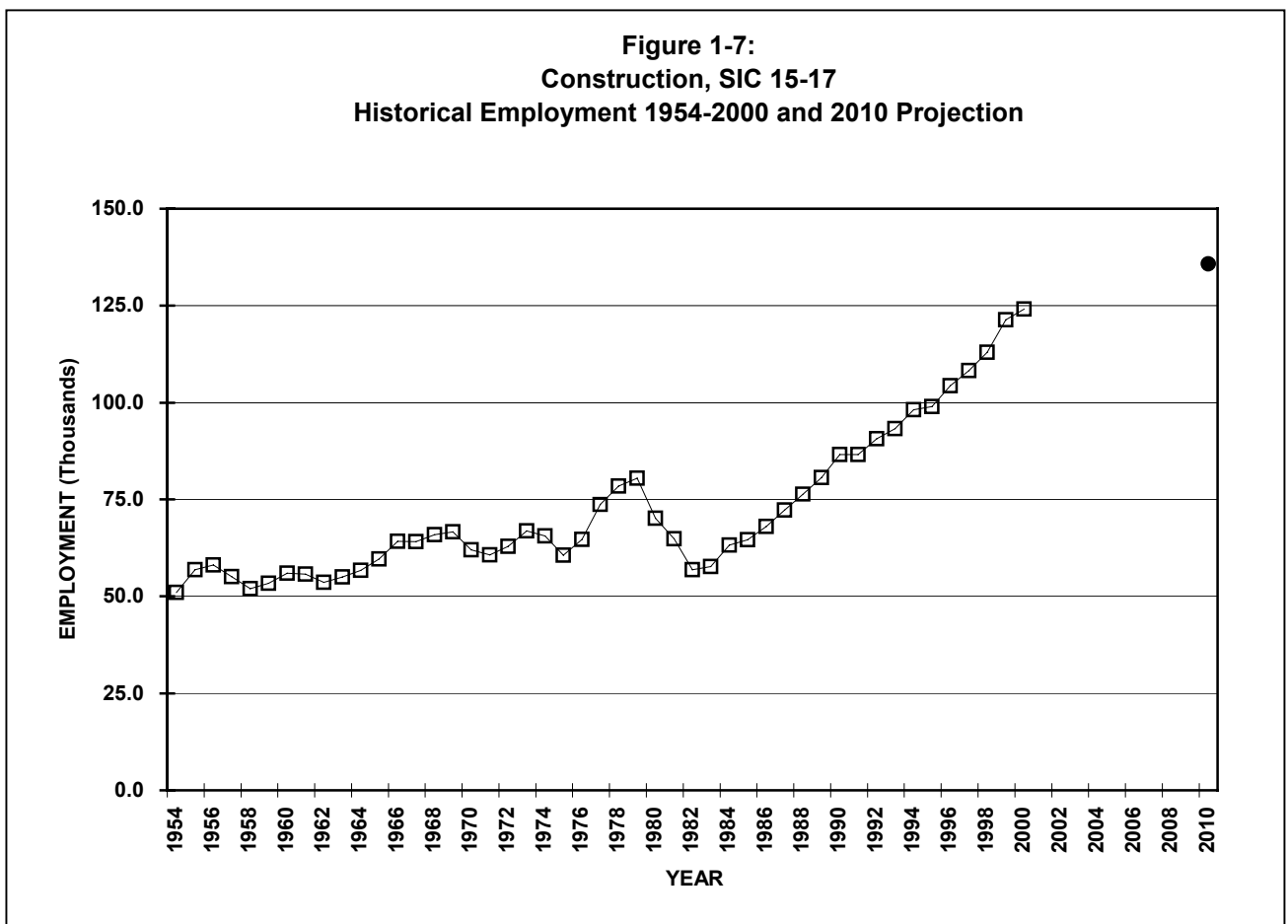
- Construction Laborers: 1,360
- Electricians: 1,340
- Carpenters : 1,210
- Sheet Metal Workers: 1,080
- First-Line Supervisors/Managers of Construction Trades and Extraction Workers: 690



Construction (continued)

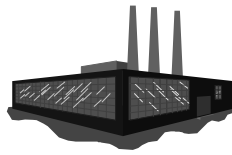
Occupations Losing the Most Jobs (2000-2010 Decrease)

- Secretaries, Except Legal, Medical, and Executive: -250
- Bookkeeping, Accounting, and Auditing Clerks: -140
- Architectural and Civil Drafters : -30
- Executive Secretaries and Administrative Assistants: -20
- Timekeeping Clerks: -20



Data Series: Current Employment Statistics, 2001 Benchmark; Wisconsin Projections 2000-2010

Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development



Manufacturing, SIC 20-39

**Figure 1-8:
Manufacturing Employment Outlook**

Average Employment 1954-2000	Estimated Employment 2000	Projected Employment 2010	2000-2010 Lost Jobs	2000-2010 % Change for this Industry	2000-2010 % Change Across all Industries
522,700	615,740	603,310	(12,430)	-2.0%	9.6%
Data Series: Current Employment Statistics, 2001 Benchmark; 2000-2010 Wisconsin Projections Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors Wisconsin Department of Workforce Development					

Description

Manufacturing includes all businesses that mechanically or chemically transform materials into new products.

A distinction is made between manufacturers that make durable goods (goods lasting a year or more) and those that produce nondurable goods (goods lasting less than a year). In 2000, 60% of manufacturing employment was in durable manufacturing and 40% in nondurable.

More information about durable and nondurable manufacturers is found in the following pages.

Past, Present, and Future Employment

As shown in figure 1-9, employment in manufacturing has experienced many ups and downs since 1954. In 1998, manufacturing reached a peak of 618,500 jobs. Since 1999, employment has been declining. However, this sector is anticipated to regain some employment by 2010, and end the decade with 603,310 jobs.

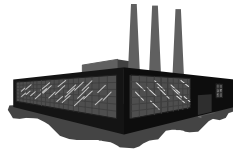
In 2000, manufacturing accounted for 20% of total jobs in Wisconsin's economy. By 2010, this proportion is expected to fall to 18%.

Factors Affecting Employment

A combination of weak domestic and global demand; mergers and consolidations; automation; globalization of operations; outsourcing of employment to temporary help agencies; and uncertainty regarding the war with Iraq have caused employment in Wisconsin's manufacturing sector to shrink during the past few years.

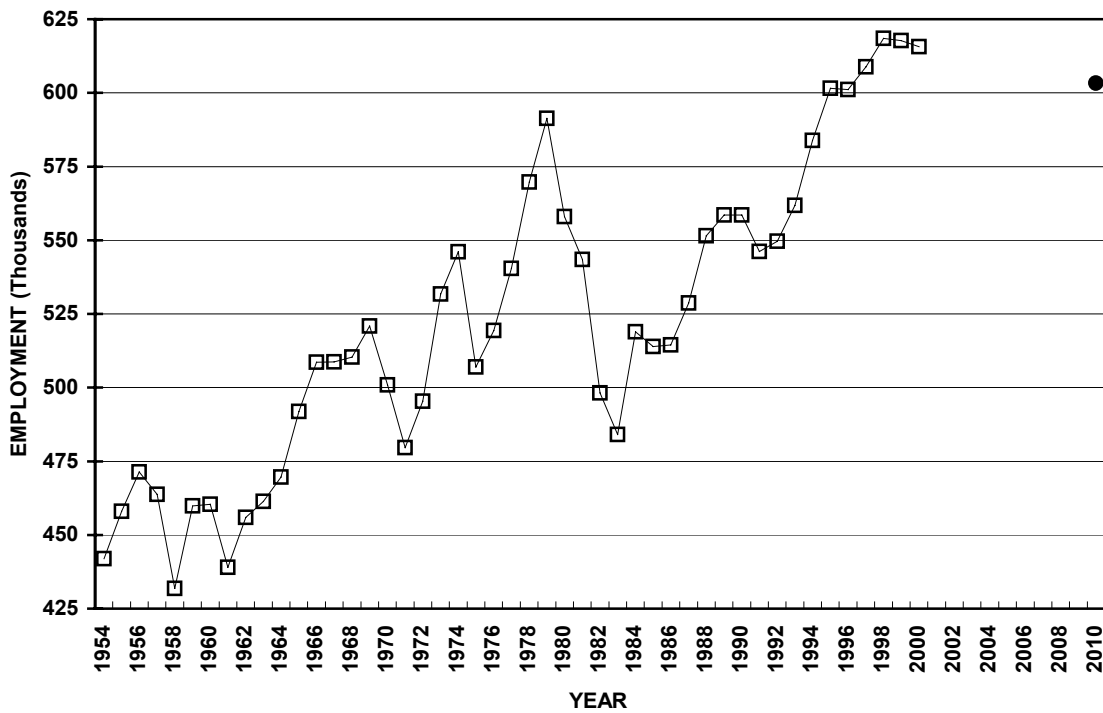
During the remaining years of the decade, demand is expected to strengthen for some manufacturing industries, but all industries are expected to continue merging, globalizing, and using temporary workers.

Historically, durable goods manufacturers have accounted for 61 to 66 percent of all manufacturing employment in Wisconsin. Most of manufacturing's erratic employment pattern is due to employment swings among durable goods producers.



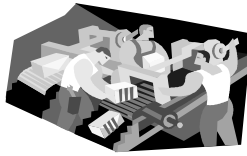
Manufacturing (continued)

Figure 1-9:
Manufacturing, SIC 20-39
Historical Employment 1954-2000 and 2010 Projection



Data Series: Current Employment Statistics, 2001 Benchmark; Wisconsin Projections 2000-2010

Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development



Durable Goods Manufacturing, SIC 24-25, 32-39

**Figure 1-10:
Durable Goods Manufacturing Employment Outlook**

Average Employment 1954-2000	Estimated Employment 2000	Projected Employment 2010	2000-2010 Lost Jobs	2000-2010 % Change for this Industry	2000-2010 % Change Across all Industries
327,500	375,460	366,100	(9,360)	-2.5%	9.6%
Data Series: Current Employment Statistics, 2001 Benchmark; 2000-2010 Wisconsin Projections Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors Wisconsin Department of Workforce Development					

Description

Durable goods manufacturers make products that last one year or more, such as automobiles and home appliances. Industries included in this group are: lumber and wood products; furniture and fixtures; stone, clay, and glass products; primary metal products; fabricated metal products; industrial machinery and equipment; electrical and other electronic equipment; transportation equipment; instruments and related products; and miscellaneous manufacturing.

In 2000, the largest industries within durable goods were industrial machinery and equipment with a 29% share of employment and fabricated metal products with an 18% share.

More information about specific durable goods industries is found in the following pages.

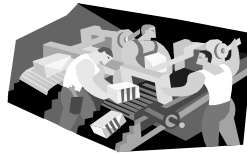
Past, Present, and Future Employment

Durable goods employment is characterized by wide fluctuations. In 1954 employment was 270,000. In 1979, employment reached a peak of 392,500. Just four years later employment dropped by 98,000 jobs to 294,500.

By 1998, employment was back up to 378,900. However, since then employment has declined. In 2010, durable goods is expected to have 366,100 jobs.

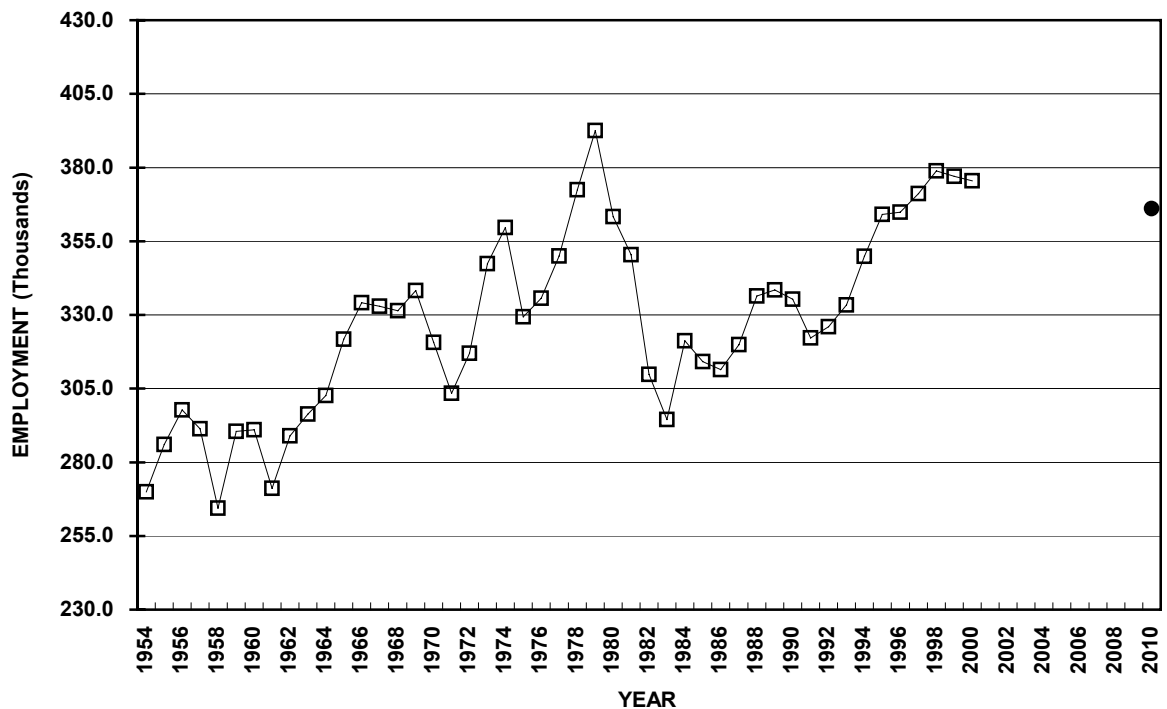
Factors Affecting Employment

Lackluster domestic and global demand, along with industry consolidation have had the most significant negative effects on durable goods employment during the past few years. More details follow in the focus on specific durable goods industries.



Durable Goods Manufacturing (continued)

Figure 1-11:
Durable Goods Manufacturing, SIC 24-25, 32-39
Historical Employment 1954-2000 and 2010 Projection



Data Series: Current Employment Statistics, 2001 Benchmark; Wisconsin Projections 2000-2010
Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development



Primary Metal, SIC 33

**Figure 1-12:
Primary Metal Employment Outlook**

Average Employment 1954-2000	Estimated Employment 2000	Projected Employment 2010	2000-2010 Lost Jobs	2000-2010 % Change for this Industry	2000-2010 % Change Across all Industries
25,000	26,170	23,300	(2,870)	-11.0%	9.6%
Data Series: Current Employment Statistics, 2001 Benchmark; 2000-2010 Wisconsin Projections Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors Wisconsin Department of Workforce Development					

Description

Primary metal firms smelt and refine metals; roll, draw, and alloy metals; and manufacture castings, nails, and insulated wire. In Wisconsin, 52% of primary metal jobs are found in iron and steel foundries, and 31% of jobs are in nonferrous foundries.

Past, Present, and Future Employment

The highest employment level in primary metals was 31,300 reached in 1966. In 1983 employment dropped to 17,600. In 2000, employment was back up to 26,200. In 2010, employment is expected to be 23,300.

Factors Affecting Employment

Primary metal products face stiff competition from plastic products, especially for automobile parts. During the decade, plastic products are expected to gain more market share and employment at the expense of primary metal manufacturers.

The implementation of new capital-intensive technologies will also lead to declines in employment.

Occupations Adding the Most Jobs (2000-2010 Increase)

- No occupations are expected to add significant numbers of new jobs.

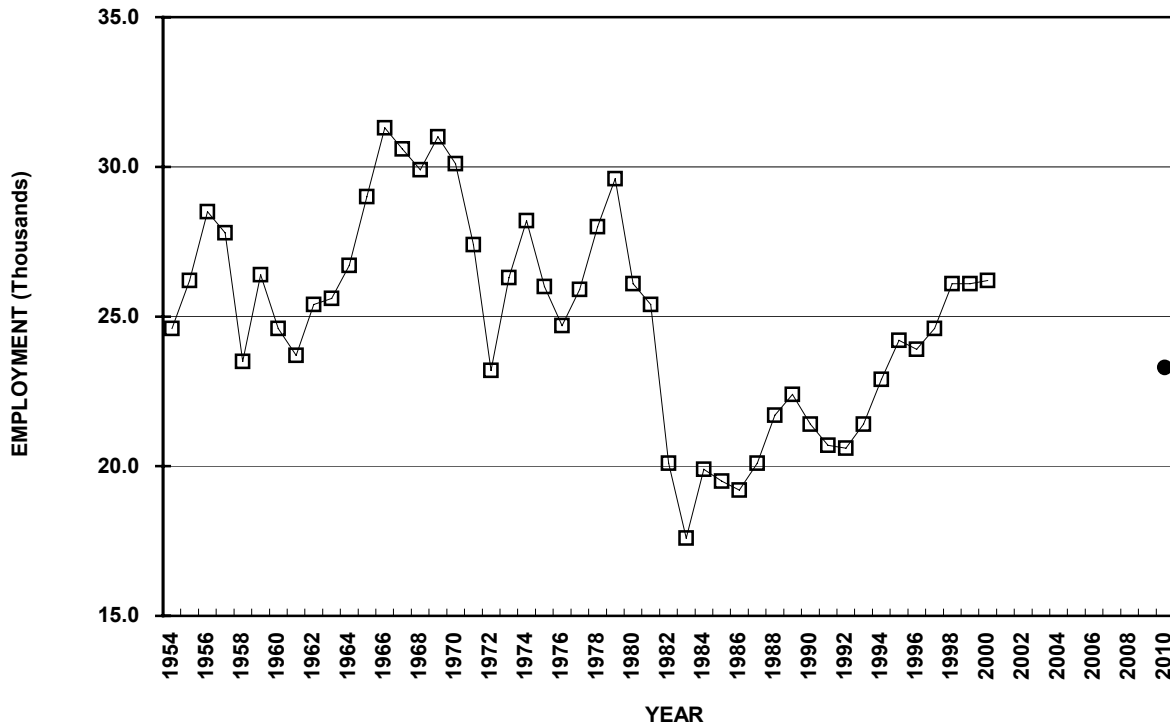
Occupations Losing the Most Jobs (2000-2010 Decrease)

- Foundry Mold and Coremakers: -430
- Cutting, Punching, and Press Machine Setters, Operators, and Tenders: -260
- Inspectors, Testers, Sorters, Samplers, and Weighers: -210
- Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders: -160
- Maintenance Repair Workers, General: -150



Primary Metal (continued)

Figure 1-13:
Primary Metal Industry, SIC 33
Historical Employment 1954-2000 and 2010 Projection



Data Series: Current Employment Statistics, 2001 Benchmark; Wisconsin Projections 2000-2010

Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development



Fabricated Metal Products, SIC 34

**Figure 1-14:
Fabricated Metal Employment Outlook**

Average Employment 1954-2000	Estimated Employment 2000	Projected Employment 2010	2000-2010 Lost Jobs	2000-2010 % Change for this Industry	2000-2010 % Change Across all Industries
49,700	67,790	65,600	(2,190)	-3.2%	9.6%
Data Series: Current Employment Statistics, 2001 Benchmark; 2000-2010 Wisconsin Projections Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors Wisconsin Department of Workforce Development					

Description

Firms in the fabricated metal products industry make items such as metal cans, hand tools, general hardware, metal stampings, and a wide variety of sheet metal products.

Employment is concentrated in fabricated structural metal products (such as fabricated iron and steel; metal doors; and sheet metal) and miscellaneous fabricated metal products (such as valves, fittings, springs, and wire products). These two groups of businesses accounted for 44% of fabricated metal employment in 2000.

Past, Present, and Future Employment

Although employment in this industry has had some ups and downs, employment has generally increased since 1954. In 1998, employment reached a historic peak of 68,500. In 2000, employment slightly dropped to 67,790, yet this industry was Wisconsin's second largest manufacturing employer and twelfth largest employer overall.

By 2010, employment is expected to decline by an additional 2,190 jobs to a level of 65,600. By 2010, this drop in employment and subsequent growth in other industries will result in fabricated metal falling to third largest among manufacturing industries and fifteenth largest industry overall.

Factors Affecting Employment

Employment in this industry is affected by a number of factors. Some segments of the industry are being adversely affected by the substitution of plastic for metal products. Other sectors are closely tied to the construction industry and will continue to do well as long as demand for new construction and remodeling remains strong. Many firms are also dependent on strong international demand for their products. In addition, the industry is continuing to implement labor-saving equipment.

Occupations Adding the Most New Jobs (2000-2010 Increase)

- Welders, Cutters, Solderers, and Brazers: 870
- Computer-Controlled Machine Tool Operators: 130
- Packers and Packagers, Hand: 100
- Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders: 100
- Coating, Painting, and Spraying Machine Setters, Operators, and Tenders: 70

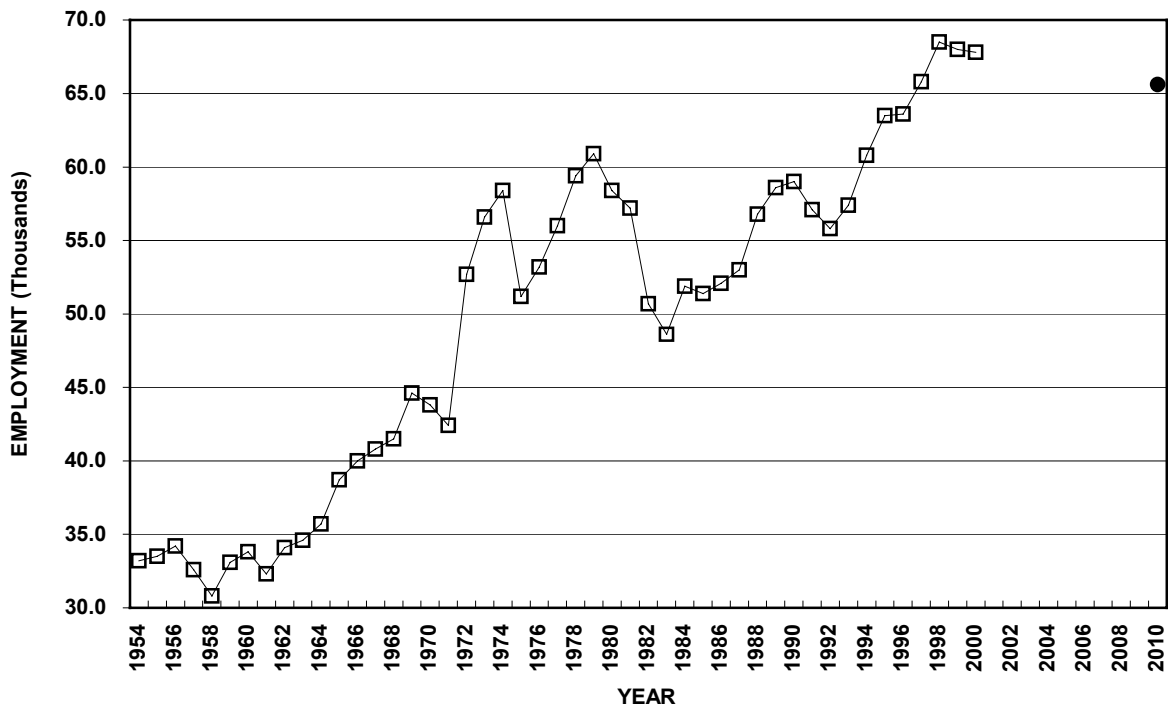


Fabricated Metal Products (continued)

Occupations Losing the Most Jobs (2000-2010 Decrease)

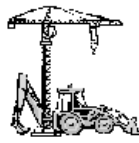
- Cutting, Punching, and Press Machine Setters, Operators, and Tenders: -1,040
- Team Assemblers: -470
- Inspectors, Testers, Sorters, Samplers, and Weighers: -260
- Lathe and Turning Machine Tool Setters, Operators, and Tenders: -180
- Maintenance Repair Workers, General: -170

Figure 1-15:
Fabricated Metal Products, SIC 34
Historical Employment 1954-2000 and 2010 Projection



Data Series: Current Employment Statistics, 2001 Benchmark; Wisconsin Projections 2000-2010

Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development



Industrial and Commercial Machinery, and Computer Equipment, SIC 35

Figure 1-16:
Industrial and Commercial Machinery, and Computer Equipment Employment Outlook

Average Employment 1954-2000	Estimated Employment 2000	Projected Employment 2010	2000-2010 Lost Jobs	2000-2010 % Change for this Industry	2000-2010 % Change Across all Industries
107,700	109,410	104,100	(5,310)	-4.9%	9.6%

Data Series: Current Employment Statistics, 2001 Benchmark; 2000-2010 Wisconsin Projections
Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors
Wisconsin Department of Workforce Development

Description

Firms in this industry manufacture a variety of products for both business and household consumers. Some of the products are engines and turbines; farm and garden machinery; construction and mining machinery; cranes; metalworking machinery; and computer and office equipment.

The number of jobs in computer and office equipment accounts for only 4% of employment in this industry. The remaining employment is almost evenly split among manufacturers of the other products listed above.

Past, Present, and Future Employment

In 1979, employment in industrial and commercial machinery reached a historic high of 137,600 jobs. By 1983 employment had fallen to 95,000.

In 2000, the number of jobs was up to 109,410. Employment is projected to be 104,100 in 2010.

In 2000, industrial and commercial machinery, and computer equipment was Wisconsin's largest manufacturing employer as well as the sixth largest employer overall. The industry is expected to retain these rankings in 2010.

Factors Affecting Employment

Most of the machinery produced by this industry is used by other industries to manufacture their own products. Consequently, employment in the industrial machinery industry is directly related to other industry demand for new machinery. In turn, other industry demand is related to that industry's profits, interest rates, availability of credit, the degree of consolidations and mergers, and demand for their own products.

For several years many industrial machinery customers have been facing consolidations and mergers within their own industries. In addition, international customers have been struggling with weak domestic economies. As a result, demand for industrial machinery has declined. During the 2000 to 2010 period, most international economies are expected to improve but consolidations and mergers are expected to continue in many industries. Overall, demand for industrial machinery and equipment is not expected to increase enough to lead to a rise in employment over the ten year period.



Industrial and Commercial Machinery, and Computer Equipment (continued)

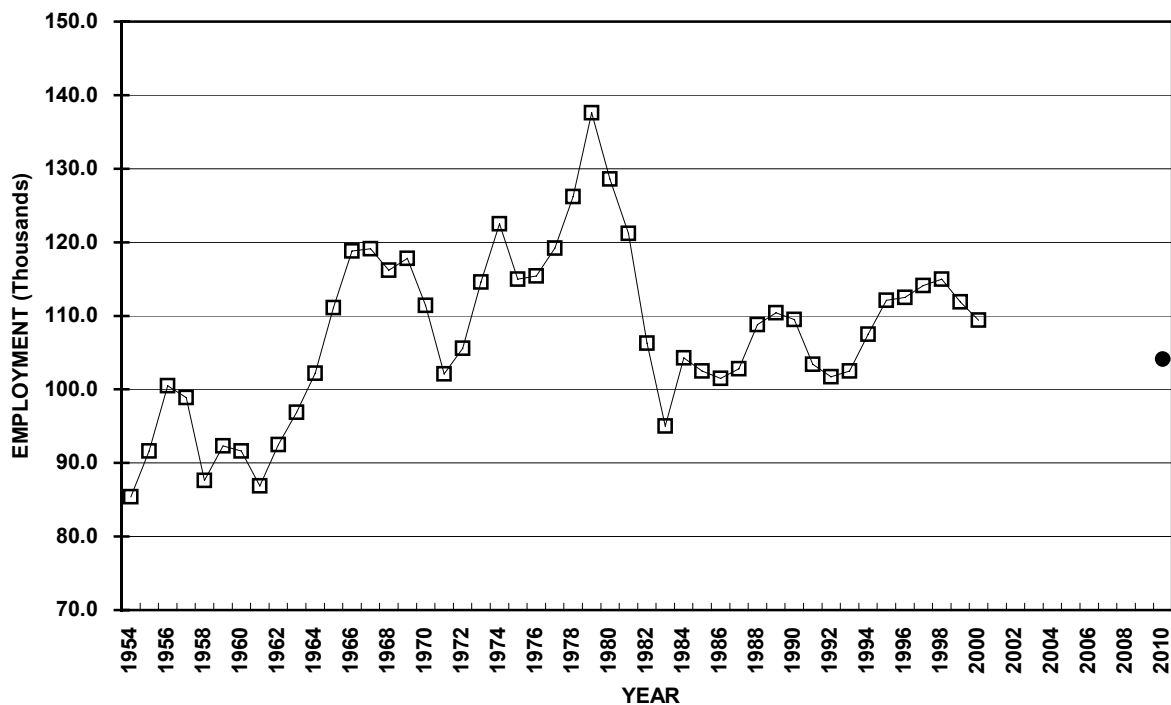
Occupations Adding the Most New Jobs (2000-2010 Increase)

- Welders, Cutters, Solderers, and Brazers: 300
- Computer-Controlled Machine Tool Operators: 280
- Structural Metal Fabricators and Fitters: 120
- Computer Support Specialists: 100
- Electricians: 70

Occupations Losing the Most Jobs (2000-2010 Decrease)

- Team Assemblers: -600
- Machinists: -430
- Inspectors, Testers, Sorters, Samplers, and Weighers: -400
- Lathe and Turning Machine Tool Setters, Operators, and Tenders: -380
- Cutting, Punching, and Press Machine Setters, Operators, and Tenders: -380

Figure 1-17:
Industrial and Commercial Machinery, and Computer Equipment, SIC 35
Historical Employment 1954-2000 and 2010 Projection



Data Series: Current Employment Statistics, 2001 Benchmark; Wisconsin Projections 2000-2010

Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development



Electronic and Electrical Equipment, SIC 36

**Figure 1-18:
Electronic and Electrical Equipment Employment Outlook**

Average Employment 1954-2000	Estimated Employment 2000	Projected Employment 2010	2000-2010 Lost Jobs	2000-2010 % Change for this Industry	2000-2010 % Change Across all Industries
43,100	46,700	44,100	(2,600)	-5.6%	9.6%
Data Series: Current Employment Statistics, 2001 Benchmark; 2000-2010 Wisconsin Projections Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors Wisconsin Department of Workforce Development					

Description

Firms in the electronic and electrical equipment industry make a variety of products that generate, store, transmit, transform, and/or use electricity. These products include electrical transmission and distribution equipment; electric motors and generators; industrial controls; household appliances; and electric lighting and wiring.

Over one-third of this industry's employment is in electrical industrial apparatus (such as motors, generators, and industrial controls). Nearly another quarter of employment is in electronic components and accessories (such as semiconductors; printed circuit boards; and electronic transformers).

Past, Present, and Future Employment

Since 1954, employment in the electronic and electrical equipment industry has experienced many peaks and valleys. In 1966 employment was 49,600 but dropped to 37,600 in 1975. In 1979 employment was back up to 48,300 but then dropped down to 38,100 in 1991. By 1998 employment had risen again to 47,200. From 2000 to 2010 employment is expected to drop to 44,100.

Factors Affecting Employment

Two major factors affecting employment in this industry are technological change and increasing globalization. Many of the electronic products made in the industry are used in computer and communications equipment. The industry is continually trying to improve the speed, reduce the physical size, and increase the capacity of this type of equipment. The firms that succeed in offering new innovations will be the firms that maintain their employment numbers. Firms in this industry are also globalizing their operations. Products are being designed in one country, manufactured in a second country, and then assembled in yet another country.

Occupations Adding the Most New Jobs (2000-2010 Increase)

- Computer Support Specialists: 90
- Network and Computer Systems Administrators: 60
- Packers and Packagers, Hand: 60
- Computer Software Engineers, Systems Software: 40
- Electro-Mechanical Technicians: 30

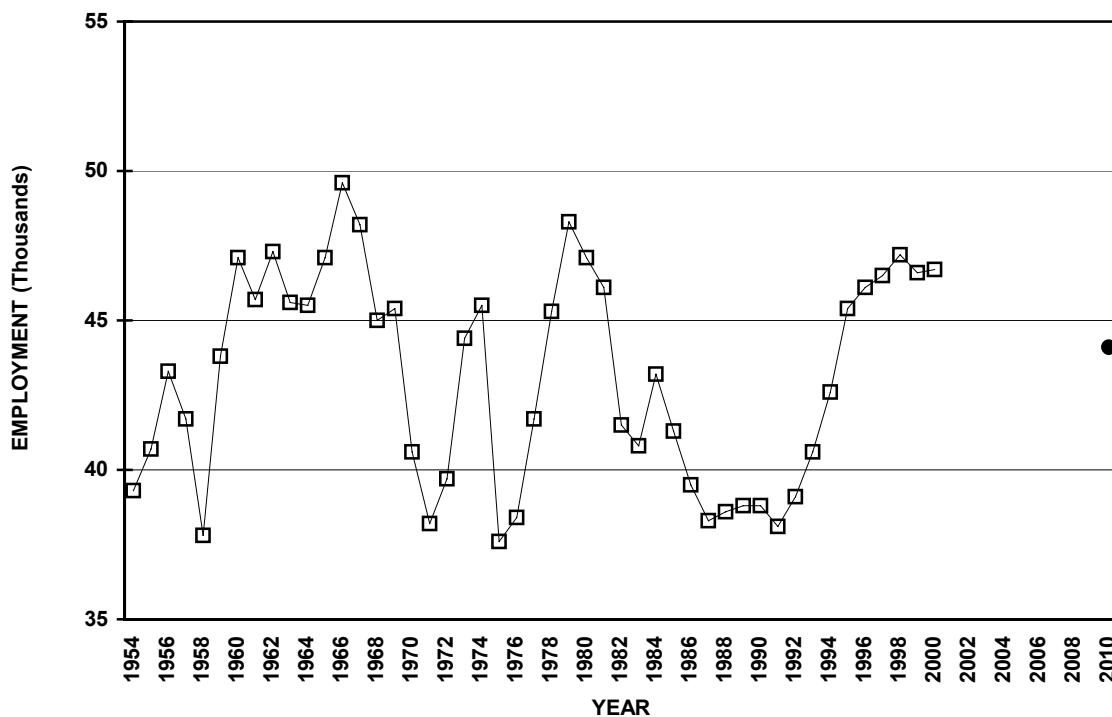


Electronic and Electrical Equipment (continued)

Occupations Losing the Most Jobs (2000-2010 Decrease)

- Team Assemblers: -620
- Electrical and Electronic Equipment Assemblers: -520
- Inspectors, Testers, Sorters, Samplers, and Weighers: -190
- Cutting, Punching, and Press Machine Setters, Operators, and Tenders: -170
- Engine and Other Machine Assemblers: -100

Figure 1-19:
Electronic and Electrical Equipment, SIC 36
Historical Employment 1954-2000 and 2010 Projection



Data Series: Current Employment Statistics, 2001 Benchmark; Wisconsin Projections 2000-2010

Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development



Transportation Equipment, SIC 37

**Figure 1-20:
Transportation Equipment Employment Outlook**

Average Employment 1954-2000	Estimated Employment 2000	Projected Employment 2010	2000-2010 Lost Jobs	2000-2010 % Change for this Industry	2000-2010 % Change Across all Industries
36,000	34,240	31,800	(2,440)	-7.1%	9.6%

Data Series: Current Employment Statistics, 2001 Benchmark; 2000-2010 Wisconsin Projections
Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors
Wisconsin Department of Workforce Development

Description

The transportation equipment industry includes manufacturers of automobiles, motorcycles, boats, trailers, and campers.

Almost two-thirds of Wisconsin's transportation equipment employment is in motor vehicles and motor vehicle equipment. Another fourteen percent of jobs are in motorcycles, bicycles, and parts. Thirteen percent of employment is in ship and boat building and repairing.

Past, Present, and Future Employment

Employment in transportation equipment peaked in 1960 at 48,400. Since then employment has generally moved downward, although there have been ups and downs. In 1991, employment reached its lowest level of 24,100. Even though employment was back up to 34,240 in 2000, it is expected to fall to 31,800 in 2010.

Factors Affecting Employment

Ongoing automation, globalization, mergers, and consolidations will continue to affect employment in the transportation equipment industry. Computerized machinery is assuming tasks previously performed by people. Firms are dividing development and production tasks among their plants in a number of countries. Mergers between U.S. based firms, as well as between U.S. and international firms are also expected to continue.

Occupations Adding the Most New Jobs (2000-2010 Increase)

- Electricians: 70
- There are no other occupations with significant numbers of new jobs.

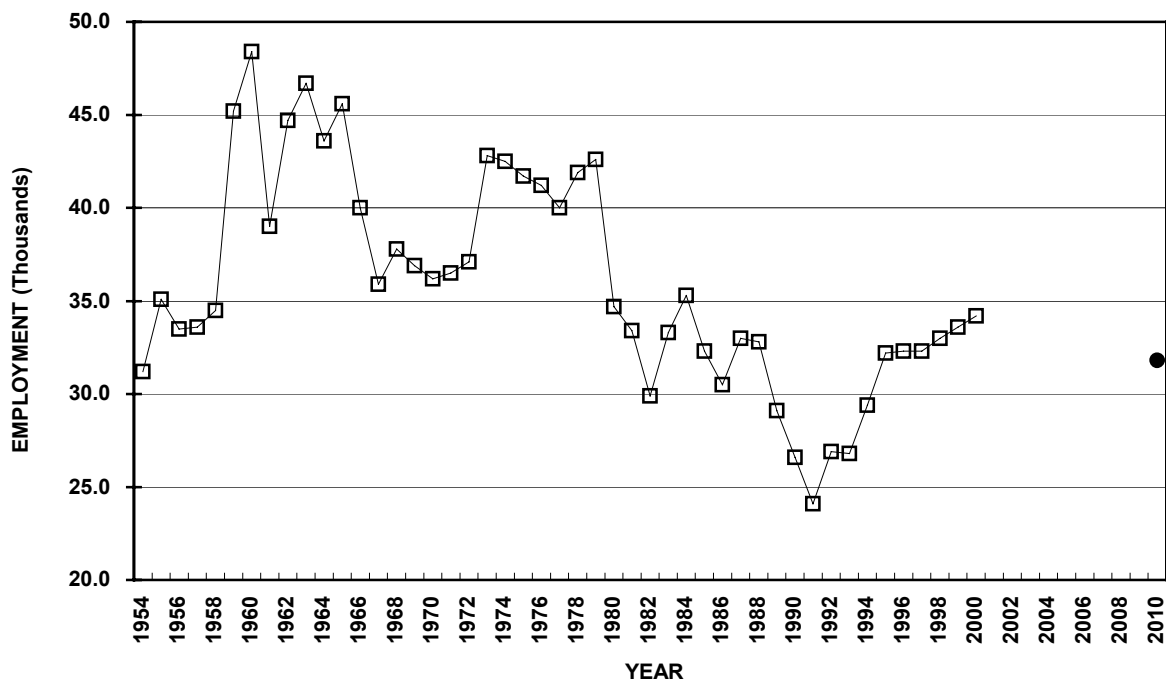


Transportation Equipment (continued)

Occupations Losing the Most Jobs (2000-2010 Decrease)

- Team Assemblers: -410
- Fiberglass Laminators and Fabricators: -160
- Inspectors, Testers, Sorters, Samplers, and Weighers: -100
- Millwrights: -90
- First-Line Supervisors and Managers of Production and Operating Workers: -90

Figure 1-21:
Transportation Equipment, SIC 37
Historical Employment 1954-2000 and 2010 Projection



Data Series: Current Employment Statistics, 2001 Benchmark; Wisconsin Projections 2000-2010

Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development



Instruments and Related Products, SIC 38

**Figure 1-22:
Instruments and Related Products Employment Outlook**

Average Employment 1954-2000	Estimated Employment 2000	Projected Employment 2010	2000-2010 Lost Jobs	2000-2010 % Change for this Industry	2000-2010 % Change Across all Industries
15,300	17,730	17,300	(430)	-2.4%	9.6%

Data Series: Current Employment Statistics, 2001 Benchmark; 2000-2010 Wisconsin Projections
Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors
Wisconsin Department of Workforce Development

Description

The instruments and related products industry is composed of manufacturers of instruments that measure, test, analyze and/or control a wide variety of mechanical, environmental, electrical, and biological processes.

Employment in this industry is concentrated among manufacturers of laboratory and medical instruments and supplies. These firms control 87% of employment in this industry.

Past, Present, and Future Employment

Employment in instruments and related products has ranged from a low of 6,800 in 1961 to a high of 20,900 in 1989. Between 1990 and 2000, the number of jobs steadily declined to 17,700. Over the next ten years employment is expected to be relatively flat ending the decade at a level of 17,300.

Factors Affecting Employment

Global demand for laboratory, surgical, medical, and dental instruments is expected to increase as populations age in both developed and developing countries. In addition, developing countries are modernizing their health care systems. Also, there is strong demand for equipment that can reduce labor expenses, increase labor productivity, reduce patient hospital stays, or facilitate patient care in less expensive settings.

Although product demand should remain strong, employment in this industry is not expected to increase. This is because the instruments and related products industry is expected to implement more efficient production methods and outsource assembly positions.

Occupations Adding the Most New Jobs (2000-2010 Increase)

- Financial Analysts: 80
- Computer Software Engineers, Applications: 70
- Customer Service Representatives: 60
- Marketing Managers: 60
- Computer Software Engineers, Systems Software: 40

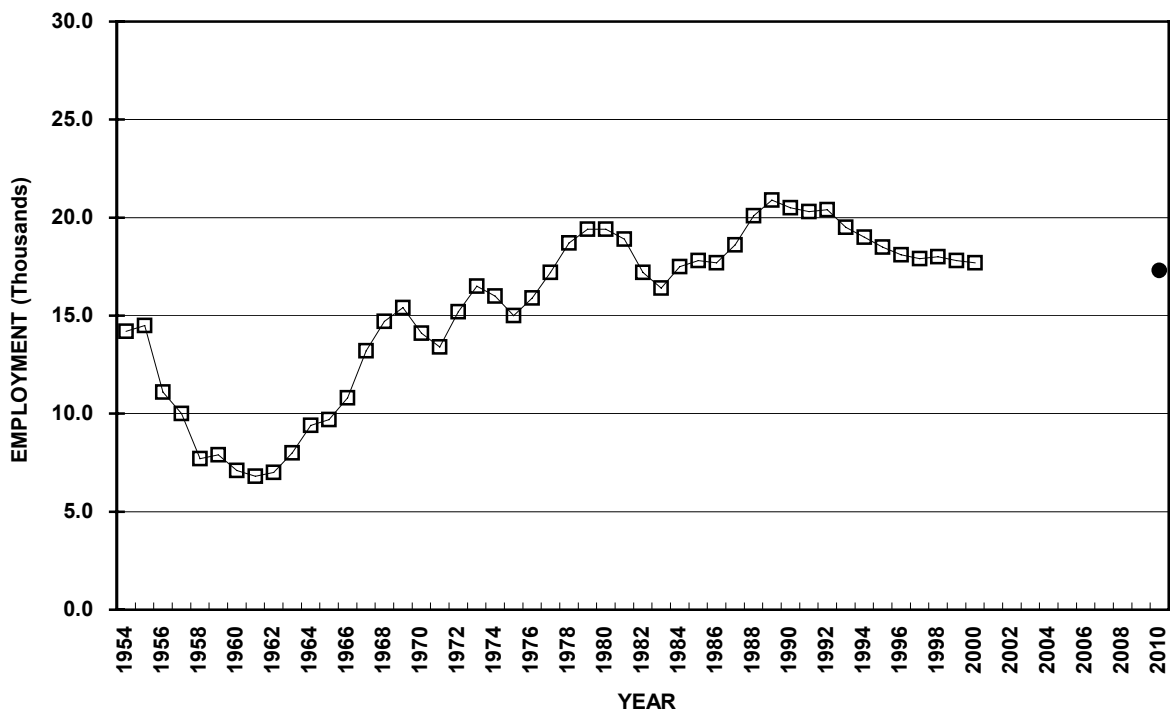


Instruments and Related Products (continued)

Occupations Losing the Most Jobs (2000-2010 Decrease)

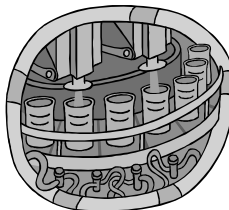
- Team Assemblers: -150
- Electrical and Electronic Equipment Assemblers: -140
- Order Clerks: -90
- Inspectors, Testers, Sorters, Samplers, and Weighers: -40
- Industrial Engineers: -40

Figure 1-23:
Instruments and Related Products, SIC 38
Historical Employment 1954-2000 and 2010 Projection



Data Series: Current Employment Statistics, 2001 Benchmark; Wisconsin Projections 2000-2010

Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development



Nondurable Goods Manufacturing, SIC 20, 22, 23, 26-31

**Figure 1-24:
Nondurable Goods Manufacturing Employment Outlook**

Average Employment 1954-2000	Estimated Employment 2000	Projected Employment 2010	2000-2010 Lost Jobs	2000-2010 % Change for this Industry	2000-2010 % Change Across all Industries
195,200	240,280	237,210	(3,070)	-1.3%	9.6%
Data Series: Current Employment Statistics, 2001 Benchmark; 2000-2010 Wisconsin Projections Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors Wisconsin Department of Workforce Development					

Description

Nondurable goods manufacturers make products which generally last less than one year. Industries included in this sector are: food and kindred products; textile mill products; apparel and textile products; paper and allied products; printing and publishing; chemicals and allied products; petroleum and coal products; rubber and miscellaneous plastics products; and leather and leather products.

In 2000 the largest industries within nondurable goods were food and kindred products (28% of jobs); printing and publishing (23% of jobs); and paper and allied products (22% of jobs).

More information about specific nondurable goods manufacturers is found in the following pages.

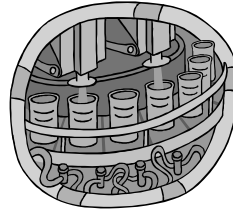
Past, Present, and Future Employment

Employment in nondurable goods manufacturing is characterized by a relatively steady increase between 1983 and 2000. In 1983 employment stood at 189,600. In 2000, employment reached 240,300. Employment is expected to end the decade at 237,210.

Factors Affecting Employment

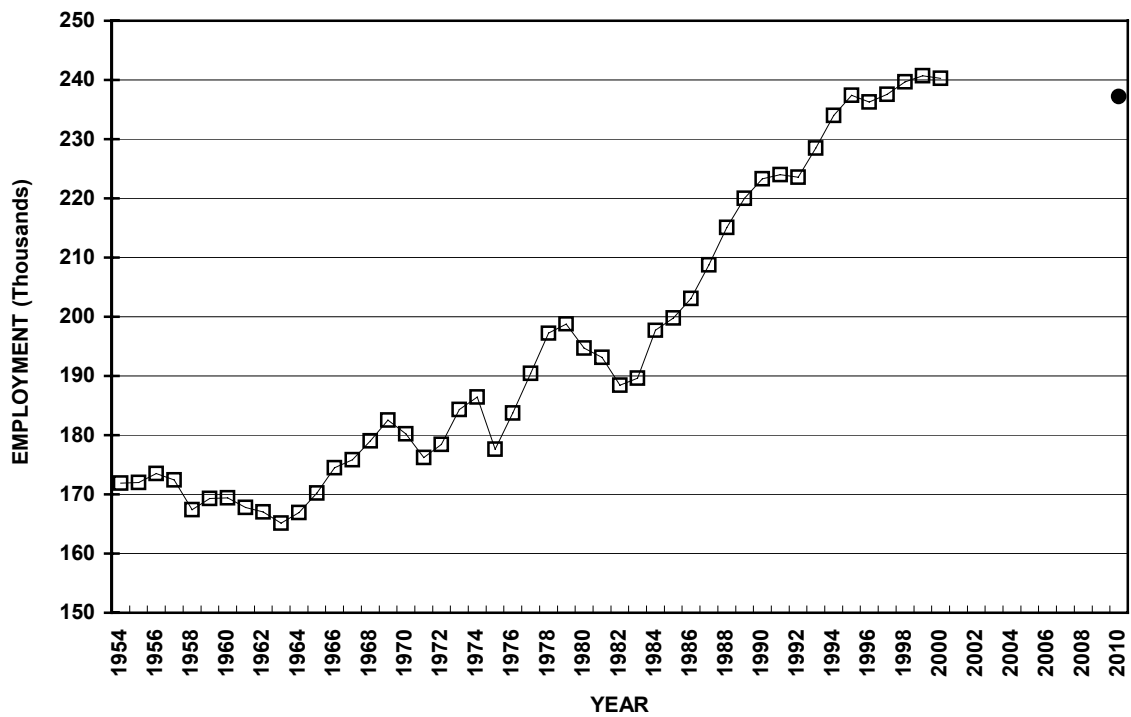
The factors significantly affecting nondurable goods employment are mergers and consolidations, automation, globalization of operations, and increasing competition from other countries.

More details follow in the analysis of specific nondurable goods industries.



Nondurable Goods Manufacturing (continued)

Figure 1-25:
Nondurable Goods Manufacturing, SIC 20, 22, 23, 26-31
Historical Employment 1954-2000 and 2010 Projection



Data Series: Current Employment Statistics, 2001 Benchmark; Wisconsin Projections 2000-2010

Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development



Food and Kindred Products, SIC 20

**Figure 1-26:
Food and Kindred Products Employment Outlook**

Average Employment 1954-2000	Estimated Employment 2000	Projected Employment 2010	2000-2010 New Jobs	2000-2010 % Change for this Industry	2000-2010 % Change Across all Industries
62,400	67,180	68,300	1,120	1.7%	9.6%

Data Series: Current Employment Statistics, 2001 Benchmark; 2000-2010 Wisconsin Projections
Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors
Wisconsin Department of Workforce Development

Description

The food and kindred products industry includes businesses that manufacture or process food and beverages. In Wisconsin this industry is dominated by meat producers, dairy products manufacturers, and fruit and vegetable canneries.

This industry is a significant source of employment in Wisconsin. In 2000, this industry was the largest nondurable goods employer, the third largest manufacturing employer, and the thirteenth largest employer overall.

In 2010, food and kindred products is expected to surpass fabricated metal products and become the second largest manufacturing employer, but drop to the fourteenth largest employer overall.

Past, Present, and Future Employment

Employment in food and kindred products has ranged from a low of 57,200 in 1954 to a high of 67,200 in 2000. In 2010, employment is projected to be 68,300.

Factors Affecting Employment

Job growth will be concentrated in meat products and miscellaneous foods and kindred products (such as snack foods, leavening agents, and ready-to-eat salads and vegetables). These areas are adding jobs due to population growth in the U.S. and subsequent increases in demand. In addition, growth in restaurants is increasing orders for these products.

The food and kindred products industry as a whole is continuing to invest in new plants and equipment which exerts downward pressure on employment. However, increased demand for the products described above will lead to increases in employment for the industry overall.



Food and Kindred Products (continued)

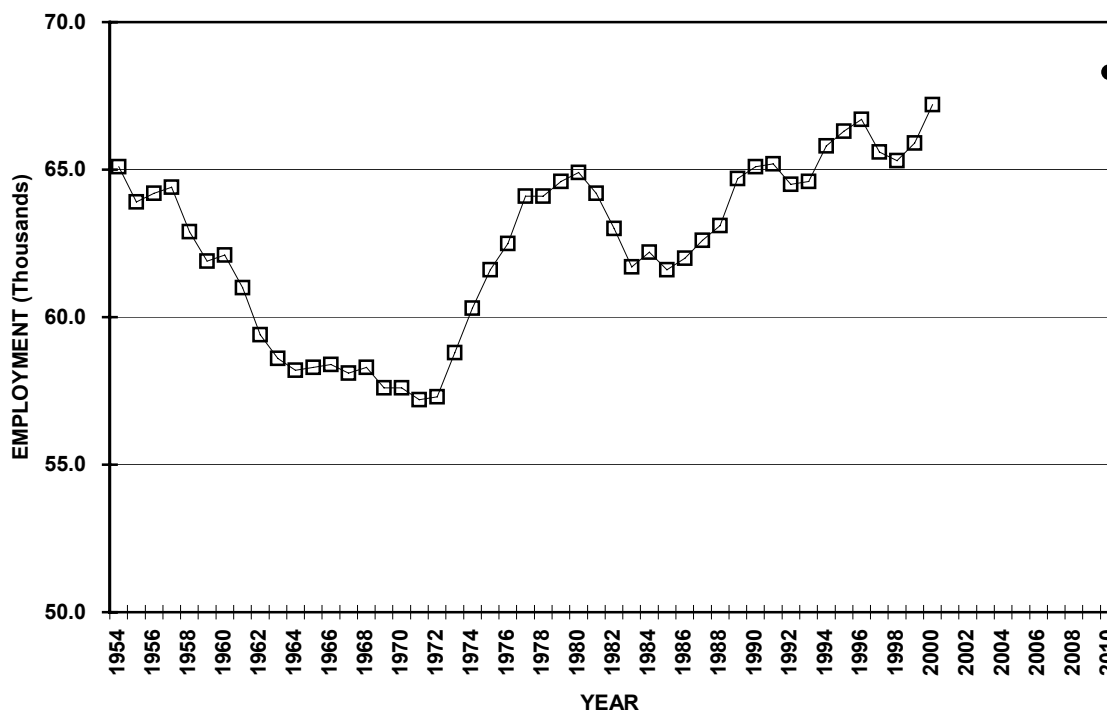
Occupations Adding the Most New Jobs (2000-2010 Increase)

- Slaughterers and Meat Packers: 400
- Meat, Poultry, and Fish Cutters and Trimmers: 300
- Butchers and Meat Cutters: 210
- Packaging and Filling Machine Operators and Tenders: 210
- Printing Machine Operators: 170

Occupations Losing the Most Jobs (2000-2010 Decrease)

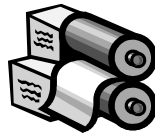
- Inspectors, Testers, Sorters, Samplers, and Weighers: -230
- Machine Feeders and Offbearers: -140
- Maintenance and Repair Workers, General: -130
- Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders: -120
- Laborers and Freight, Stock, and Material Movers, Hand: -100

Figure 1-27:
Food and Kindred Products, SIC 20
Historical Employment 1954-2000 and 2010 Projection



Data Series: Current Employment Statistics, 2001 Benchmark; Wisconsin Projections 2000-2010

Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development



Paper and Allied Products, SIC 26

**Figure 1-28:
Paper and Allied Products Employment Outlook**

Average Employment 1954-2000	Estimated Employment 2000	Projected Employment 2010	2000-2010 Lost Jobs	2000-2010 % Change for this Industry	2000-2010 % Change Across all Industries
45,900	52,250	50,800	(1,450)	-2.8%	9.6%
Data Series: Current Employment Statistics, 2001 Benchmark; 2000-2010 Wisconsin Projections Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors Wisconsin Department of Workforce Development					

Description

The paper and allied products industry manufactures pulp, paper, paperboard, and converted paper and paperboard products. The industry also includes firms that make bags out of plastic film and sheeting.

In Wisconsin, this industry is dominated by makers of paper, paperboard containers, and converted paper and paperboard products. In 2000, paper mills accounted for 55% of employment, converted paper and paperboard products 28%, and paperboard containers 15%.

Past, Present, and Future Employment

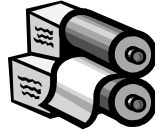
Employment in paper and allied products generally moved upward from 36,500 in 1954 to 53,400 in 1997, despite a dip to 40,800 in 1975. Since 1998, employment has been declining and was at 52,250 in 2000. In 2010, employment is projected to fall to 50,800.

Factors Affecting Employment

There are three major factors influencing employment in this industry. First, automation has reduced, and continues to reduce, the need for people. Second, firms are continuing to merge and consolidate, thereby reducing payrolls. Third, sales in the industry are dependent upon strong domestic and international demand for paper products. Since the late 1990s many firms have seen demand drop as many domestic and international customers face economic downturns.

Occupations Adding the Most New Jobs (2000-2010 Increase)

- Packers and Packagers, Hand: 140
- Printing Machine Operators: 120
- Electricians: 60
- Cutting and Slicing Machine Setters, Operators, and Tenders: 60
- Chemical Equipment Operators and Tenders: 50

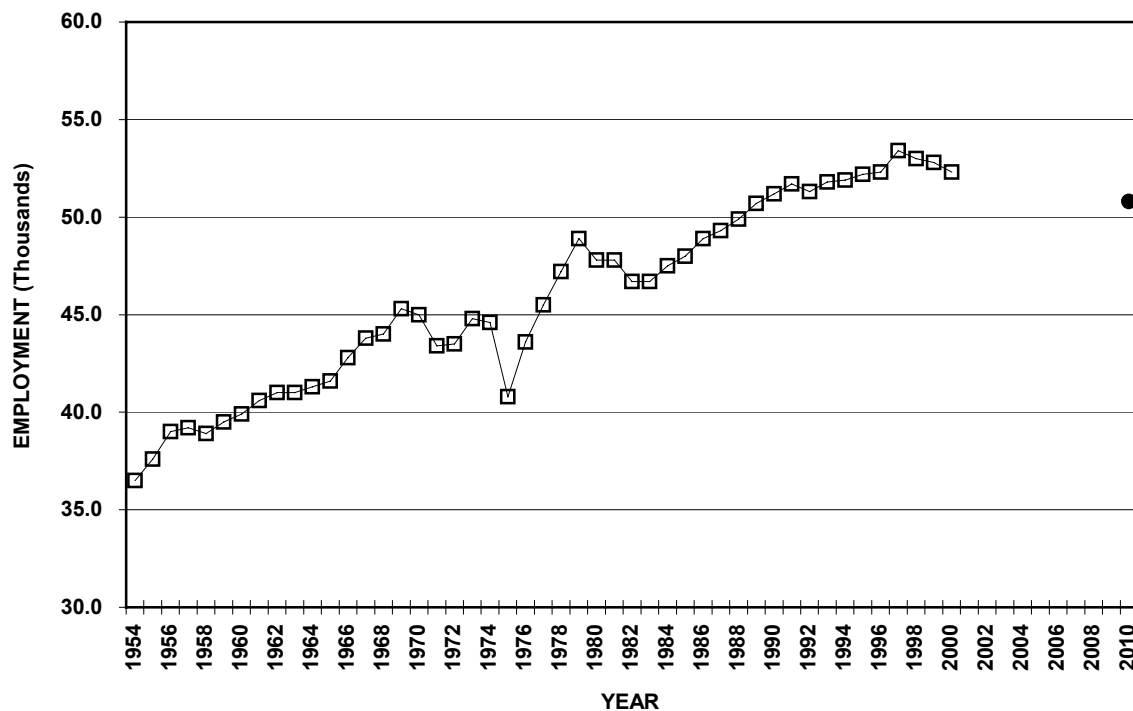


Paper and Allied Products (continued)

Occupations Losing the Most Jobs (2000-2010 Decrease)

- Paper Goods Machine Setters, Operators, and Tenders: -330
- Laborers and Freight, Stock, and Material Movers, Hand: -150
- Millwrights: -120
- Inspectors, Testers, Sorters, Samplers, and Weighers: -110
- Maintenance and Repair Workers, General: -100

Figure 1-29:
Paper and Allied Products, SIC 26
Historical Employment 1954-2000 and 2010 Projection



Data Series: Current Employment Statistics, 2001 Benchmark; Wisconsin Projections 2000-2010

Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development



Printing and Publishing, SIC 27

**Figure 1-30:
Printing and Publishing Employment Outlook**

Average Employment 1954-2000	Estimated Employment 2000	Projected Employment 2010	2000-2010 Lost Jobs	2000-2010 % Change for this Industry	2000-2010 % Change Across all Industries
33,700	54,690	53,400	(1,290)	-2.4%	9.6%
Data Series: Current Employment Statistics, 2001 Benchmark; 2000-2010 Wisconsin Projections Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors Wisconsin Department of Workforce Development					

Description

The printing and publishing industry includes businesses engaged in printing by one or more processes such as letterpress, lithography, gravure, or screen. The industry also includes firms that perform services for the printing trade, such as bookbinding and platemaking. In addition, the industry includes publishers of newspapers, books, and periodicals, regardless of whether or not they do their own printing.

In Wisconsin, this industry is dominated by commercial printers which control 56% of employment and newspapers which control 20%.

Past, Present, and Future Employment

With few exceptions, employment in printing and publishing steadily increased from 1954 to 1999. In 1999 employment reached an all time high of 55,300. In 2000, employment dropped to 54,690. Employment is expected to end the decade at 53,400.

Factors Affecting Employment

Like most manufacturing industries, the printing and publishing industry is experiencing ongoing automation and consolidation. One of the most significant changes in printing technology is the shift from analog (film- and chemical-based) to digital (electronic-based) processes. The printing industry also is experiencing competition from non-print media sources such as the internet.

Occupations Adding the Most New Jobs (2000-2010 Increase)

- Desktop Publishers: 510
- Editors: 300
- Bindery Workers: 200
- Advertising Sales Agents: 170
- Job Printers: 90

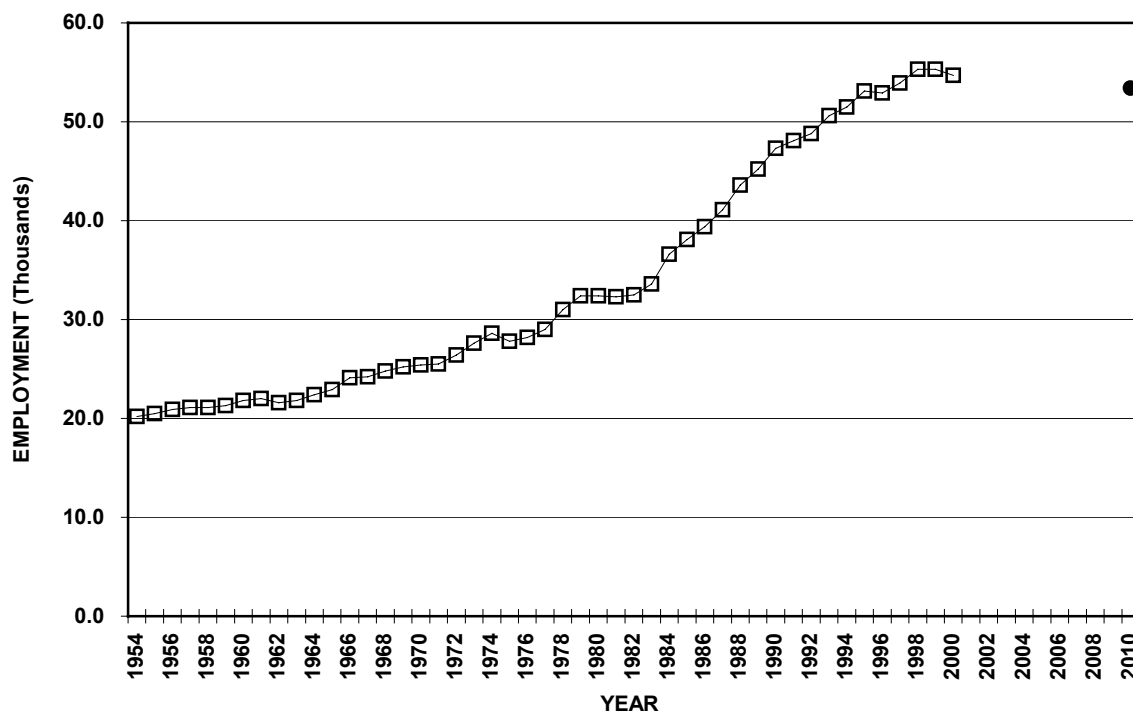


Printing and Publishing (continued)

Occupations Losing the Most Jobs (2000-2010 Decrease)

- Prepress Technicians and Workers: -690
- Machine Feeders and Offbearers: -430
- First-Line Supervisors and Managers of Production and Operating Workers: -140
- Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products: -130
- Order Clerks: -120

Figure 1-31:
Printing and Publishing, SIC 27
Historical Employment 1954-2000 and 2010 Projection



Data Series: Current Employment Statistics, 2001 Benchmark; Wisconsin Projections 2000-2010

Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development



Rubber and Miscellaneous Plastic Products, SIC 30

**Figure 1-32:
Rubber and Miscellaneous Plastic Products Employment Outlook**

Average Employment 1954-2000	Estimated Employment 2000	Projected Employment 2010	2000-2010 New Jobs	2000-2010 % Change for this Industry	2000-2010 % Change Across all Industries
19,400	39,180	40,000	820	2.1%	9.6%

Data Series: Current Employment Statistics, 2001 Benchmark; 2000-2010 Wisconsin Projections
Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors
Wisconsin Department of Workforce Development

Description

Rubber and miscellaneous plastics products includes firms manufacturing products, not elsewhere classified, from plastics resins or from natural, synthetic, or reclaimed rubber.

Although the industry does produce both rubber and plastic products, about 87% of Wisconsin's employment in this industry group is in miscellaneous plastic products.

Past, Present, and Future Employment

Despite a few dips in the 1970s and 1980s, employment in rubber and miscellaneous plastics products soared from 6,400 in 1954 to 39,180 in 2000. Growth is expected to slow during the next ten years, with 2010 employment reaching 40,000.

Factors Affecting Employment

A primary factor driving employment growth in this industry is on-going substitution of plastic for metal parts in all types of items. For example, automobiles, home appliances, computers, and cellular telephones are being made with more plastic parts. Also, plastic is replacing paper-, glass-, and metal-based packaging and containers.

This industry is also implementing computer-controlled machinery which will eliminate the need for some positions. However the need for additional workers due to growth in product demand is expected to outweigh the affects of substituting machines for people.

Occupations Adding the Most New Jobs (2000-2010 Increase)

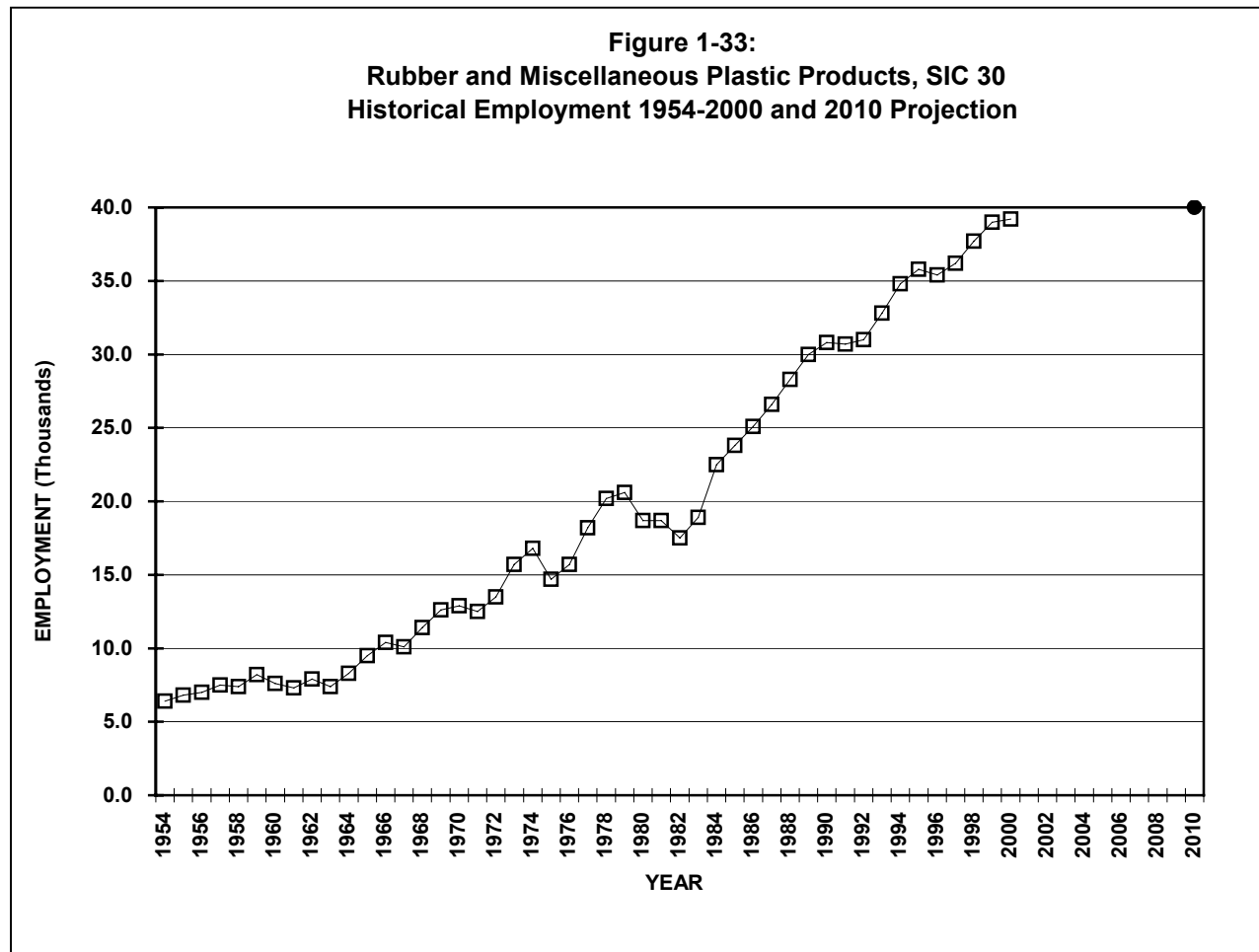
- Computer-Controlled Machine Tool Operators: 260
- Multiple Machine Tool Setters, Operators, and Tenders: 160
- Packers and Packagers, Hand: 160
- Extruding and Drawing Machine Setters, Operators, and Tenders: 120
- Welders, Cutters, Solderers, and Brazers: 70



Rubber and Miscellaneous Plastic Products (continued)

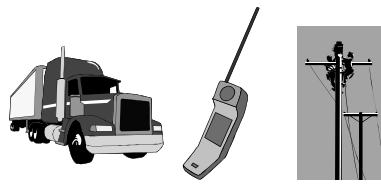
Occupations Losing the Most Jobs (2000-2010 Decrease)

- Cutting, Punching, and Press Machine Setters, Operators, and Tenders: -200
- Inspectors, Testers, Sorters, Samplers, and Weighers: -160
- Machine Feeders and Offbearers: -40
- Order Clerks: -30
- Shoe Machine Operators and Tenders: -20



Data Series: Current Employment Statistics, 2001 Benchmark; Wisconsin Projections 2000-2010

Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development



Transportation, Communications, and Public Utilities, SIC 40-49

Figure 1-34:
Transportation, Communications, and Public Utilities Employment Outlook

Average Employment 1954-2000	Estimated Employment 2000	Projected Employment 2010	2000-2010 New Jobs	2000-2010 % Change for this Industry	2000-2010 % Change Across all Industries
91,400	133,600	142,940	9,340	7.0%	9.6%

Data Series: Current Employment Statistics, 2001 Benchmark; 2000-2010 Wisconsin Projections
Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors
Wisconsin Department of Workforce Development

Description

The transportation, communications, and public utilities division includes firms providing passenger and freight transportation; communications services; or electricity, gas, water, or sanitary services. Railroads, bus transportation, trucking, air transportation, radio and television stations, and telephone services are all included in this division.

In Wisconsin, transportation related firms account for the 72% of jobs in the division, while communications provides 15%, and utilities 14%. The largest individual industry is trucking and warehousing (SIC 42). This industry has four out of every ten jobs within the division.

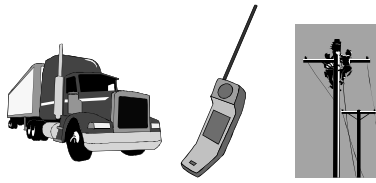
The data in figures 1-34 and 1-35 does not include employment in the U.S. postal service. Postal service employment is included under federal government employment.²

Past, Present, and Future Employment

From 1987 to 2000 employment in this division steadily increased from 95,000 to 133,600 jobs. During the past three years the division has struggled to add jobs. However, by decade's end the division is expected to have added 9,340 new jobs since 2000 and reach a level of 142,940.

The growth leaders are projected to be trucking and warehousing (adding 3,790 jobs); local and suburban transportation (adding 2,600 jobs); and air transportation (adding 1,560 jobs). The growth in air transportation is expected to be concentrated in air courier services (parcel and package delivery).

Only one industry, railroad transportation, is expected to experience a net decline in employment from 2000 to 2010. This industry is projected to lose 1,280 jobs.



Transportation, Communications, and Public Utilities (continued)

Factors Affecting Employment

A major influence on employment within the transportation segment is business and household demand for goods. As demand for goods increases or decreases, so does the need for employees in trucking and air courier services. Although business consumption has waned the past few years, household consumption has remained relatively strong. Over the remaining years of the decade, product demand is expected to be robust, and therefore will have a positive affect on employment.

Employment within the transportation segment is also being positively affected by increased demand for logistics services. More manufacturers are outsourcing distribution functions to trucking companies and other firms that specialize in arranging freight and cargo transportation. In addition, the use of just-in-time inventory management by manufacturers, wholesalers, and retailers has increased the frequency of shipments.

Job opportunities among airlines and travel agencies have been dampened the past few years due to the recession, rising fuel costs, and the events of September 11, 2001. In addition, in an effort to decrease costs, airlines have increasingly cut back on payments to travel agencies for their services, and airlines are encouraging customers to purchase tickets via the internet. There is uncertainty as to how well these industries will recover from the downturn.

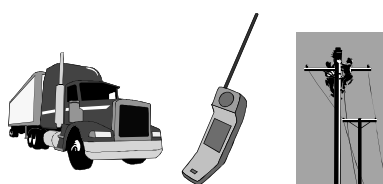
In Wisconsin, telephone communications dominate the communications segment. Three out of every five jobs (62%) are in telephone communications. However, this industry is not expected to see any job growth during the 2000-2010 period. Employment is being negatively affected by decreased business demand for new communications systems, consolidation of telecommunications firms, and implementation of new labor-saving technologies.

One area within communications expected to experience employment growth is cable and other pay television services. This industry is projected to add about 800 jobs during 2000 to 2010. Although there is consolidation occurring in this industry, robust customer demand for new and/or improved services is expected to lead to employment growth.

In the utilities and sanitary services segment, electric and gas utilities are losing employment while water and sanitary services are adding jobs. Electric and gas utilities are expected to experience a net loss of 1,320 jobs. Water utilities are expected to add 250 jobs and sanitary services are projected to add 1,420 jobs.

Electric and gas companies are decreasing their workforces due to improved production methods and customers' use of more efficient appliances. In addition regulatory changes have increased competition and led to mergers and consolidations. These trends are expected to continue to decrease employment during the 2000 to 2010 period.

In water and sanitary services additional workers are needed to carry out tasks required by regulations. These regulations call for increased monitoring of contaminants and for new methods of handling hazardous materials. Also, population growth and the development of new housing developments are increasing the need for workers.



Transportation, Communications, and Public Utilities (continued)

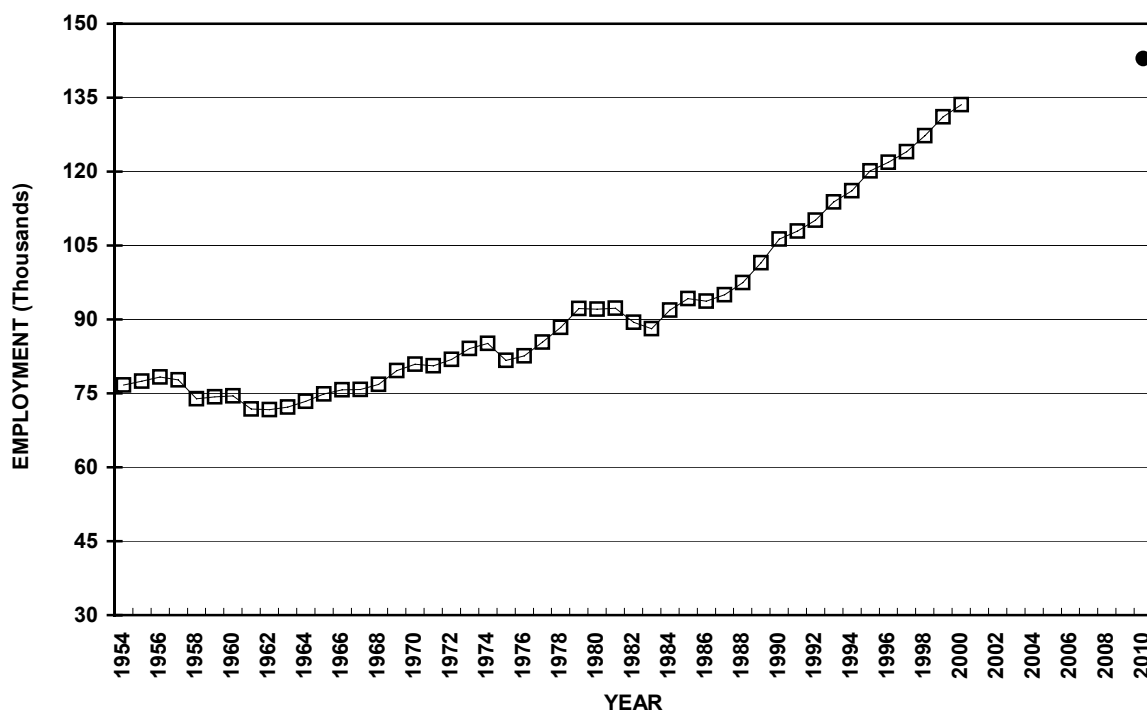
Occupations Adding the Most New Jobs (2000-2010 Increase)

- Truck Drivers, Heavy and Tractor-Trailer: 2,750
- Bus Drivers, School: 820
- Customer Service Representatives: 620
- Truck Drivers, Light and Delivery: 600
- Computer Support Specialists: 530

Occupations Losing the Most Jobs (2000-2010 Decrease)

- Telecommunications Equipment Installers and Repairers, Except Line Installers: -330
- Railroad Conductors and Yardmasters: -240
- Rail-Track Laying and Maintenance Equipment Operators: -220
- Telephone Operators: -210
- Announcers: -200

Figure 1-35:
Transportation, Communications, and Public Utilities, SIC 40-49
Historical Employment 1954-2000 and 2010 Projection



Data Series: Current Employment Statistics, 2001 Benchmark; Wisconsin Projections 2000-2010

Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development



Wholesale and Retail Trade, SIC 50-59

**Figure 1-36:
Wholesale and Retail Trade Employment Outlook**

Average Employment 1954-2000	Estimated Employment 2000	Projected Employment 2010	2000-2010 New Jobs	2000-2010 % Change for this Industry	2000-2010 % Change Across all Industries
403,800	637,330	701,400	64,070	10.1%	9.6%

Data Series: Current Employment Statistics, 2001 Benchmark; 2000-2010 Wisconsin Projections
Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors
Wisconsin Department of Workforce Development

Description

The wholesale trade division consists of firms that sell goods to retailers, businesses, farms, or other wholesalers. The retail trade division is made of businesses that sell goods for personal or household use.

In Wisconsin, retail trade accounts for 78% of trade employment, with wholesale trade making up the remaining 22%.

Almost all retail trade employment (88%) is concentrated in eating and drinking places; miscellaneous retail stores; general merchandise stores; food stores; and auto dealers and service stations. Eating and drinking places alone account for 35% of retail jobs.

Wholesale trade is divided between firms that sell durable goods (products lasting a year or more) and nondurable goods (products lasting less than a year). Durable goods wholesalers account for 58% of the employment in wholesale trade.

Most of the employment in durable goods is found among firms wholesaling machinery, equipment, and supplies (such as construction, farm, or industrial machinery, equipment, or supplies); professional and commercial equipment (such as office equipment, computers, or medical supplies); and motor vehicles, parts, and supplies.

Employment in nondurable goods wholesaling is concentrated among firms selling groceries and related products; and miscellaneous goods (such as farm supplies, books, flowers, and paints).

Past, Present, and Future Employment

Since 1954, trade employment has nearly tripled, growing from 222,200 to 637,330 jobs.

Together wholesale and retail trade is projected to add another 64,070 jobs between 2000 and 2010. Wholesale trade employment is expected to expand from 138,590 to 148,500 jobs, while retail trade is expected to grow from 498,740 to 552,500 jobs.



Wholesale and Retail Trade (continued)

Factors Affecting Employment

Wholesalers are losing business as a result of the increasing dominance of “big-box” retailers that purchase items directly from manufacturers. These large retailers have not only abandoned wholesaling networks, they are also driving out some smaller retailers who did use wholesalers. Consequently, wholesalers are consolidating and merging their operations in order to reduce costs.

The wholesale trade industry is also continually adopting the latest computer technology in its operations. Much of the record-keeping, ordering, and processing of orders is now being done electronically.

By themselves, consolidation and computerization tend to reduce employment levels. However wholesale trade employment is expected to grow during the 2000 to 2010 period due to strong household consumer demand.

As in the wholesale trade industry, robust household demand is expected to fuel employment growth in retail trade. However, the retail trade industry is looking for ways to decrease its dependence on a large workforce. Some retailers are experimenting with self-checkout systems, where consumers scan the products themselves and pay by inserting cash, credit, or debit cards into a machine. Retailers are also adopting electronic methods of record-keeping, inventory control, ordering, and processing of orders.

Employment is expanding within eating and drinking places due to population growth and sprawl; tourism; and people’s ongoing struggle with time demands which prompts them to buy food prepared outside of the home.

Employers in both wholesale and retail trade are also increasingly using workers to perform a variety of tasks, rather than having workers specialize in only one or a few tasks. For example, many restaurants are eliminating positions that focus solely on cooking or dishwashing and are adding positions where people do a combination of cooking, serving, and dishwashing.

Occupations Adding the Most New Jobs (2000-2010 Increase)

- Combined Food Preparation and Serving Workers, Fast Food: 12,600
- Retail Salespersons: 8,690
- Waiters and Waitresses: 7,050
- Cashiers: 6,560
- First-Line Supervisors and Managers of Retail Sales Workers: 2,190

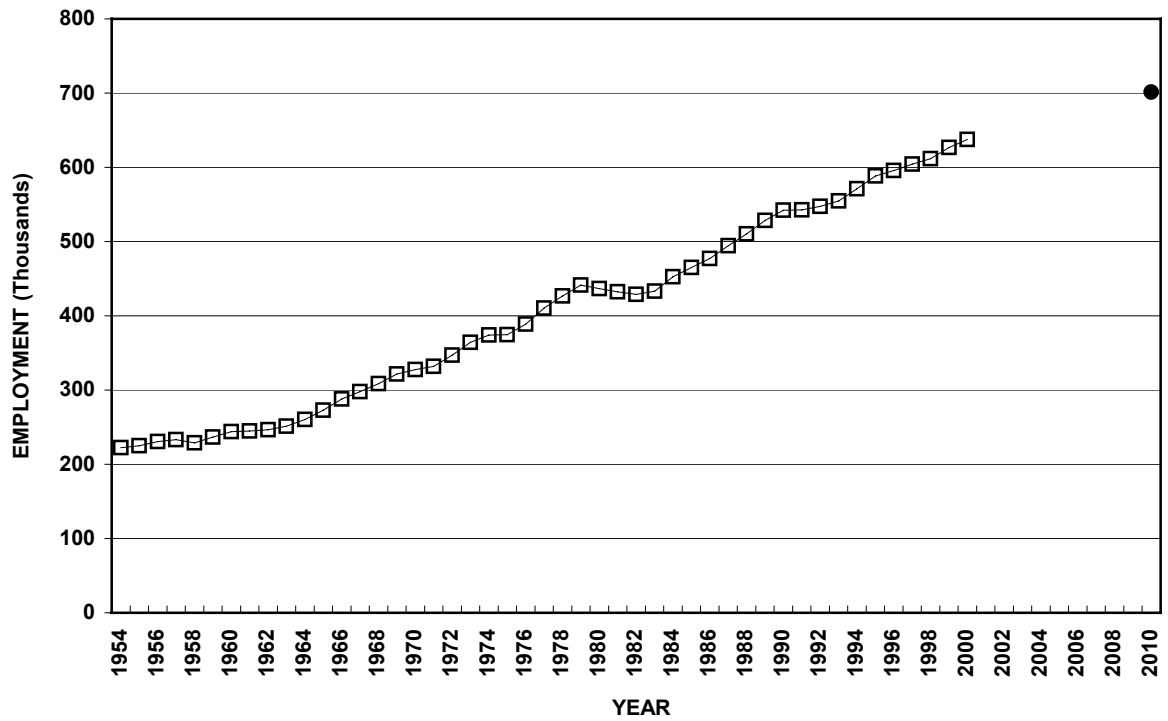
Occupations Losing the Most Jobs (2000-2010 Decrease)

- Dishwashers: -1,410
- Order Clerks: -850
- Dining Room and Cafeteria Attendants and Bartender Helpers: -700
- Parts Salespersons: -400
- Cooks, Fast Food: -360



Wholesale and Retail Trade (continued)

Figure 1-37:
Wholesale and Retail Trade, SIC 50-59
Historical Employment 1954-2000 and 2010 Projection



Data Series: Current Employment Statistics, 2001 Benchmark; Wisconsin Projections 2000-2010

Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development.



Finance, Insurance, and Real Estate, SIC 60-67

Figure 1-38:
Finance, Insurance, and Real Estate Employment Outlook

Average Employment 1954-2000	Estimated Employment 2000	Projected Employment 2010	2000-2010 New Jobs	2000-2010 % Change for this Industry	2000-2010 % Change Across all Industries
85,500	148,080	160,890	12,810	8.7%	9.6%

Data Series: Current Employment Statistics, 2001 Benchmark; 2000-2010 Wisconsin Projections
Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors
Wisconsin Department of Workforce Development

Description

The finance, insurance, and real estate division includes banks; credit agencies; security and commodity brokers; insurance carriers; insurance agents; real estate firms; and holding offices.

Wisconsin's largest employers in this group are insurance carriers, depository institutions (such as commercial banks and credit unions), and real estate firms. Insurance carriers have 33% of this division's jobs, while depository institutions have 29%, and real estate businesses 14%.

Past, Present, and Future Employment

Employment in this division increased four-fold from 1954 to 2000, from 37,200 to 148,100 jobs.

During the 2000 to 2010 period, the division is projected to add another 12,810 jobs to reach a level of 160,890.

Factors Affecting Employment

During the next ten years the blurring of functions between banks, securities firms, and insurance companies is expected to continue. Banks will be selling insurance and securities products, and insurance companies will be selling securities products.

Within depository institutions there are counteracting factors affecting employment. Automation of services, electronic transactions, and industry mergers have led to decreases in employment in some occupations and will continue to do so in the future.

However, depository institution employment is growing in other areas. Depository institutions are selling more insurance and securities products leading to job growth in occupations related to these functions. Also, low and relatively stable interest rates have increased the demand for loans and therefore the need for staff to process the loans. During the next ten years the factors contributing to positive job growth are expected to outweigh the factors leading to job cuts.



Finance, Insurance, and Real Estate (continued)

Insurance carriers are also cutting some jobs through downsizing, mergers, and computerization while at the same time increasing jobs in other areas. Like banks, insurance companies are selling more securities products and are adding jobs in this area. In addition, employment in medical service and health insurance companies is expected to grow as the population ages and claims increase.

Employment in real estate is largely subject to fluctuations in the health of the economy. Demand for home purchases and other real estate transactions will remain strong as long as business and household incomes continue to increase, interest rates remain low, and unemployment remains relatively low.

Occupations Adding the Most New Jobs (2000-2010 Increase)

- Customer Service Representatives: 5,610
- Claims Adjusters, Examiners, and Investigators: 1,080
- First-Line Supervisors and Managers of Office and Administrative Support Workers: 850
- Office Clerks, General: 730
- Computer Support Specialists: 660

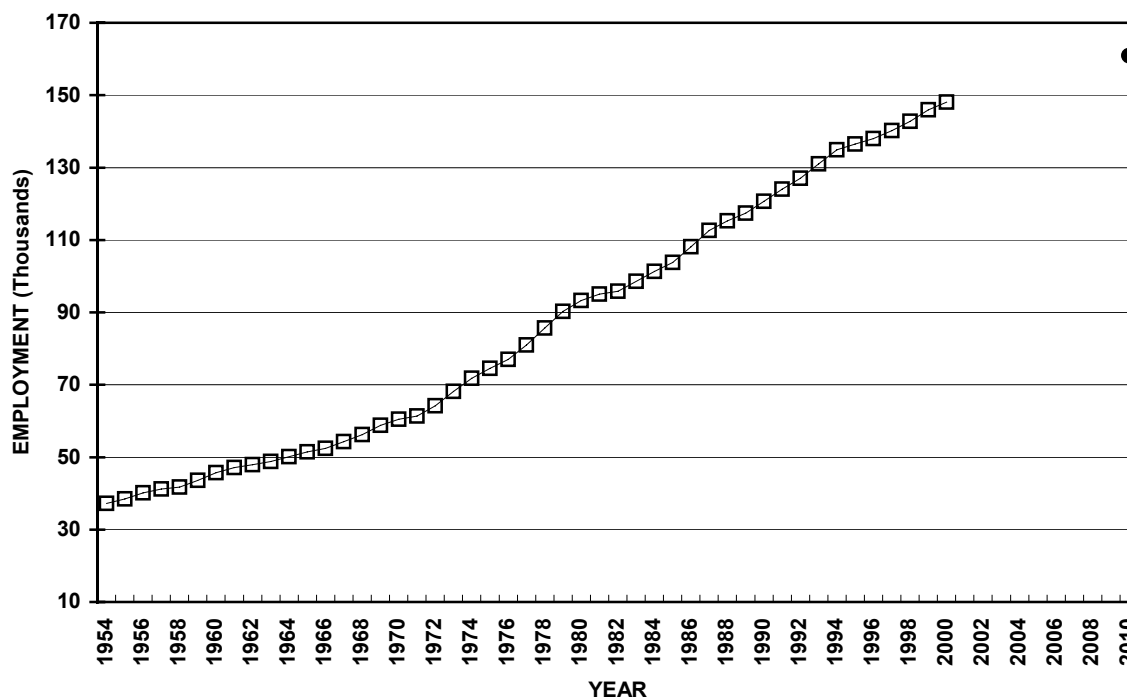
Occupations Losing the Most Jobs (2000-2010 Decrease)

- Insurance Claims and Policy Processing Clerks: -2,180
- Loan Interviewers and Clerks: -880
- Tellers: -450
- Secretaries, Except Legal, Medical, and Executive: -270
- Data Entry Keyers: -170



Finance, Insurance, and Real Estate (continued)

Figure 1-39:
Finance, Insurance, and Real Estate, SIC 60-67
Historical Employment 1954-2000 and 2010 Projection



Data Series: Current Employment Statistics, 2001 Benchmark; Wisconsin Projections 2000-2010

Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development



Services, SIC 07, 70-87, 89

**Figure 1-40:
Services Employment Outlook**

Average Employment 1954-2000	Estimated Employment 2000	Projected Employment 2010	2000-2010 New Jobs	2000-2010 % Change for this Industry	2000-2010 % Change Across all Industries
354,500	766,100	942,620	176,520	23.0%	9.6%
Data Series: Current Employment Statistics, 2001 Benchmark; 2000-2010 Wisconsin Projections Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors Wisconsin Department of Workforce Development					

Description

The services division consists of a wide variety of businesses providing services to individuals, businesses, government, and other organizations. Included in this division are agricultural services; hotels and other lodging places; personal services; business services; automobile repair services and parking; miscellaneous repair services; motion picture production and services; amusement and recreation services; health services; legal services; educational services; social services; museums, botanical and zoological gardens; membership organizations; and engineering and other management services.

The data in figures 1-40 and 1-41 exclude state and local government employment in hospitals and education.³ Private household jobs are also excluded.

The largest industries within the division are health services which accounts for 29% of total services employment, business services which makes up 20%, and social services which comprises 10%.

Past, Present, and Future Employment

Services employment has soared from 111,400 jobs in 1954 to 766,100 jobs in 2000. Between 2000 and 2010, the division is projected to add another 176,520 jobs to reach a total of 942,620.

All industries within the services division are expected to add jobs. The growth leaders will be health services (adding 54,730 jobs); business services (adding 28,310 jobs); and social services (adding 24,080 jobs).



Services (continued)

Factors Affecting Employment

Employment growth in health services is being spurred by the increasing number of older people in Wisconsin. As people age they generally have more health care needs. Employment is also increasing due to advances in medical technology and treatments that allow for more conditions to be diagnosed and treated. In addition, medical group networks are expected to become larger and more complex leading to more jobs for managers and support workers.

Most of the employment growth within business services is projected to occur in computer and data processing services and miscellaneous business services. Although job growth in these two groups has stagnated since 2001 due to the recession, both groups are expected to begin adding jobs again and finish out the decade with net gains in employment.

Computer related services are projected to expand because almost all businesses use computers in their daily operations. Several businesses rely on contractors hired through the business services industry to set-up and manage their computer systems and software. As computer technology continues to improve and businesses seek to enhance the effectiveness of their operations, employment in computer services will grow.

Miscellaneous business services includes a wide variety of services such as security, telemarketing, speakers' bureaus, sign painting, and fundraising. Much of the growth anticipated among these services is attributed to businesses outsourcing non-core operations.

A large portion of the employment growth in social services is in the residential care area. Residential care establishments provide living space for people who have limited ability to care for themselves, but are not in need of significant medical care. Due to the growth of the elderly population, and the increasing emphasis on placing the mentally and physically disabled in group home settings, employment in residential care businesses should continue to increase.

Occupations Adding the Most New Jobs (2000-2010 Increase)

- Registered Nurses: 10,160
- Nursing Aides, Orderlies, and Attendants: 6,770
- Personal and Home Care Aides: 5,830
- Maids and Housekeeping Cleaners: 4,630
- Home Health Aides: 4,180

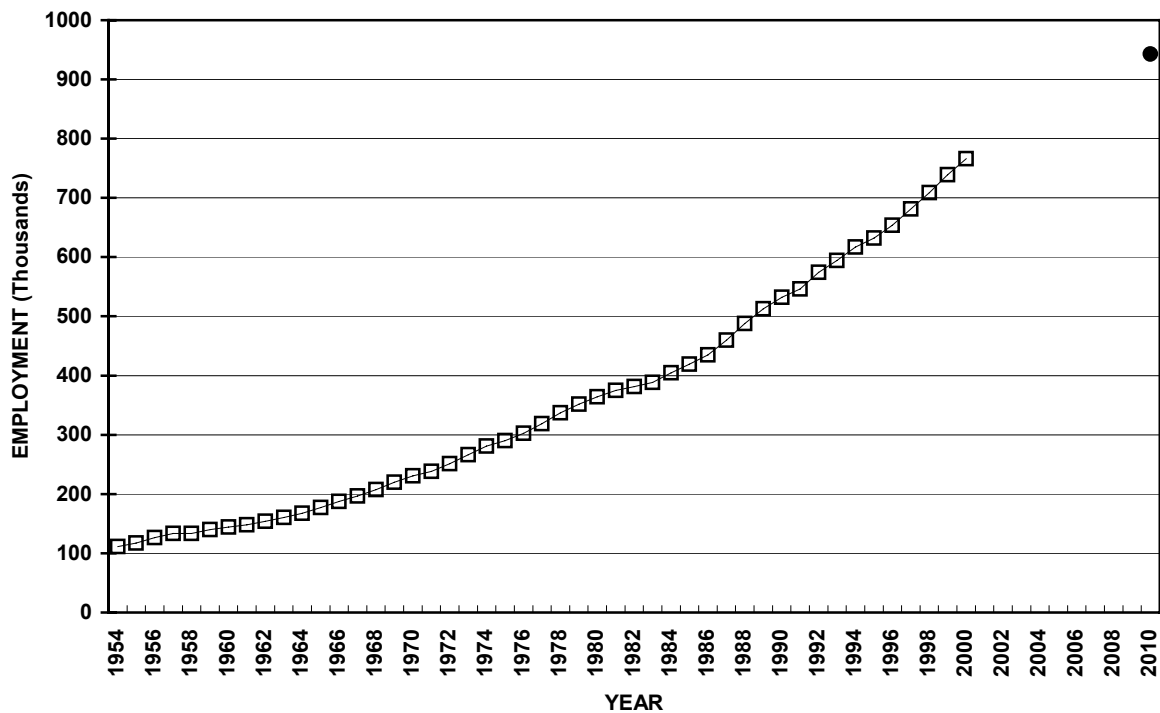
Occupations Losing the Most Jobs (2000-2010 Decrease)

- Waiters and Waitresses: -650
- Switchboard Operators, Including Answering Service: -390
- Word Processors and Typists: -260
- Data Entry Keyers: -250
- Office Machine Operators, Except Computer: -190



Services (continued)

Figure 1-41:
Services, SIC 07, 70-87, 89
Historical Employment 1954-2000 and 2010 Projection



Data Series: Current Employment Statistics, 2001 Benchmark; Wisconsin Projections 2000-2010

Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development



Federal, State, and Local Government

**Figure 1-42:
Federal, State, and Local Government Employment Outlook**

Average Employment 1954-2000	Estimated Employment 2000	Projected Employment 2010	2000-2010 New Jobs	2000-2010 % Change for this Industry	2000-2010 % Change Across all Industries
277,400	405,570	432,270	26,700	6.6%	9.6%

Data Series: Current Employment Statistics, 2001 Benchmark; 2000-2010 Wisconsin Projections
Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors
Wisconsin Department of Workforce Development

Description

Federal, state, and local government includes: executive and legislative functions; courts; correctional institutions; police and fire protection; the postal service; public finance related activities; and administration of government programs.

The data in figures 1-42 and 1-43 also include state and local government employees at hospitals or educational institutions. In addition, all government employment in other industries such as mining, construction, transportation, et cetera is included.

Also, since 1995, employment in tribal owned operations has been included in local government.

In 2000, federal government had 32,620 jobs or 8% of total government employment. State government had 97,920 jobs or 24% of government employment. Local government had 275,030 jobs or 68% of all government jobs.

Within federal government, nearly half of the 32,620 jobs are U.S. postal service jobs. In state government, 58% of the positions are in schools. In local government, 54% of the jobs are in schools.

Past, Present, and Future Employment

In 1954, government employment was 125,300. In 2000, employment reached 405,600. In 2010, employment is projected to be 432,270. Most of the growth (62% or 16,634 jobs) is expected to happen in state and local government education.

Excluding postal service, education, and hospitals, government employment is projected to increase by 10,000 jobs. Local government alone will account for 8,920 of these additional jobs. Much of this growth is attributable to expected expansions of tribal owned casinos.

Factors Affecting Employment

In 2010, federal government employment is expected to be about the same as it was in 2000. However, for many of the individual years between 2000 and 2010, employment is likely to decline. These reductions are anticipated due to governmental budget cuts, the continued use of private contractors, and the ongoing practice of shifting the responsibility of programs from the federal to state and local governments. However, as 2010 approaches, federal government employment is expected to increase due to the decennial census.



Federal, State, and Local Government (continued)

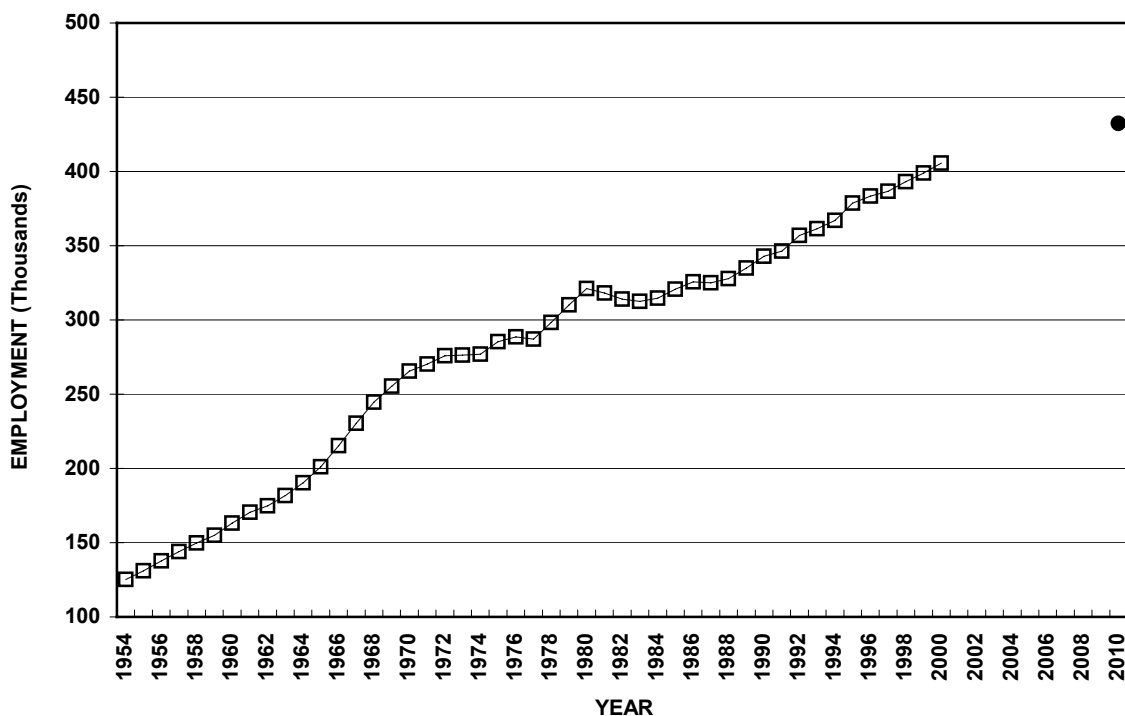
State and local government employment is projected to be higher in 2010 than in 2000. Most of the growth is anticipated in education and tribal gaming. However, perhaps more than in any other industry, there is much uncertainty regarding future employment in state and local government.

Many current state political leaders are pushing to downsize state and local government, and to decrease employment in the state's technical school and university system. In the short-term it appears these efforts are succeeding. However, over the longer-term it is difficult to project whether the cuts will continue, or whether the political climate will once again change and lead to government employment growth, especially in education.

Occupations Adding and Losing the Most Jobs

- Occupational information is not available.⁴

Figure 1-43:
Federal, State, and Local Government
Historical Employment 1954-2000 and 2010 Projection



Data Series: Current Employment Statistics, 2001 Benchmark; Wisconsin Projections 2000-2010

Source: Current Employment Statistics Unit, Bureau of Workforce Information and Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development

DETAILED INDUSTRY EMPLOYMENT PROJECTIONS

Between 2000 and 2010 Wisconsin's nonfarm employment is projected to increase from 3,011,380 to 3,301,160 jobs. This employment is now broken down among Wisconsin's 71 industry groups and is illustrated in figure 1-44.

Figure 1-44 is also available as an Excel table on the Labor Market Information website at <http://www.dwd.state.wi.us/lmi/projections.htm>.

Figure 1-44: Detailed Industry Employment Projections					
SIC Code ⁽¹⁾	Industry Title	2000 Estimated Employment ⁽²⁾	2010 Projected Employment ⁽²⁾	2000-2010 Employment Change	2000-2010 Percent Change
00	Total All Industries⁽³⁾	3,011,380	3,301,160	289,780	9.6%
A	Agriculture, Forestry, and Fishing⁽⁴⁾	15,680	20,860	5,180	33.0%
07	Agricultural Services	15,680	20,860	5,180	33.0%
B	Mining	2,750	2,500	(250)	-9.1%
10-13	Metallic Minerals and Fuels	30	30	0	0.0%
14	Nonmetallic Minerals, Except Fuels	2,720	2,480	(240)	-8.8%
C	Construction	124,070	135,800	11,730	9.5%
15	General Building Contractors	30,360	33,090	2,730	9.0%
16	General Contractors, Except Building	12,600	13,860	1,260	10.0%
17	Special Trade Contractors	81,110	88,850	7,740	9.5%
D	Manufacturing	615,740	603,310	(12,430)	-2.0%
D1	Durable Goods Manufacturing	375,460	366,100	(9,360)	-2.5%
24	Lumber and Wood Products	32,220	35,000	2,780	8.6%
25	Furniture and Fixtures	18,640	21,300	2,660	14.3%
32	Stone, Clay, and Glass	11,490	12,300	810	7.0%
33	Primary Metal Industries	26,170	23,300	(2,870)	-11.0%
34	Fabricated Metal Products	67,790	65,600	(2,190)	-3.2%
35	Industrial Machinery and Equipment	109,410	104,100	(5,310)	-4.9%
36	Electronic & Other Electrical Equipment	46,700	44,100	(2,600)	-5.6%
37	Transportation Equipment	34,240	31,800	(2,440)	-7.1%
38	Instruments and Related Products	17,730	17,300	(430)	-2.4%
39	Miscellaneous Manufacturing Industries	11,080	11,300	220	2.0%
D2	Nondurable Goods Manufacturing	240,280	237,210	(3,070)	-1.3%
20	Food & Kindred Products	67,180	68,300	1,120	1.7%
22	Textile Mill Products	2,410	2,000	(410)	-17.0%
23	Apparel and Textile Products	5,810	5,000	(810)	-13.9%
26	Paper & Allied Products	52,250	50,800	(1,450)	-2.8%
27	Printing & Publishing	54,690	53,400	(1,290)	-2.4%
28	Chemicals & Allied Products	14,830	15,700	870	5.9%
29	Petroleum and Coal Products	430	400	(30)	-7.0%
30	Rubber & Miscellaneous Plastics Products	39,180	40,000	820	2.1%
31	Leather & Leather Products	3,500	1,600	(1,900)	-54.3%

(continued)

Figure 1-44: Detailed Industry Employment Projections (continued)

SIC Code ⁽¹⁾	Industry Title	2000 Estimated Employment ⁽²⁾	2010 Projected Employment ⁽²⁾	2000-2010 Employment Change	2000-2010 Percent Change
E	Transportation and Public Utilities	149,600	159,030	9,430	6.3%
E1	Transportation	112,050	120,410	8,360	7.5%
40	Railroad Transportation	3,770	2,490	(1,280)	-34.0%
41	Local and Interurban Transit	15,920	18,520	2,600	16.3%
42	Trucking and Warehousing	53,590	57,370	3,780	7.1%
43	U.S. Postal Service ⁽⁵⁾	16,000	16,080	80	0.5%
44	Water Transportation	2,160	2,180	20	0.9%
45	Transportation by Air	13,990	15,550	1,560	11.2%
46	Pipe Lines, Except Natural Gas	120	90	(30)	-25.0%
47	Transportation Services	6,510	8,130	1,620	24.9%
E2	Communications and Utilities	37,550	38,620	1,070	2.8%
48	Communications	19,520	20,220	700	3.6%
49	Utilities and Sanitary Services	18,040	18,400	360	2.0%
FG	Wholesale and Retail Trade	637,330	701,400	64,070	10.1%
F	Wholesale Trade	138,590	148,500	9,910	7.2%
50	Wholesale Trade, Durable Goods	80,850	86,960	6,110	7.6%
51	Wholesale Trade, Nondurable Goods	57,740	61,540	3,800	6.6%
G	Retail Trade	498,740	552,900	54,160	10.9%
52	Building Materials & Garden Supplies	26,140	28,280	2,140	8.2%
53	General Merchandise Stores	66,360	71,500	5,140	7.7%
54	Food Stores	65,150	68,400	3,250	5.0%
55	Auto Dealers & Service Stations	58,560	64,300	5,740	9.8%
56	Apparel and Accessories Stores	16,170	14,930	(1,240)	-7.7%
57	Furniture & Homefurnishings Stores	19,210	21,780	2,570	13.4%
58	Eating and Drinking Places	173,380	197,940	24,560	14.2%
59	Miscellaneous Retail Stores	73,760	85,760	12,000	16.3%
H	Finance, Insurance, and Real Estate	148,080	160,890	12,810	8.7%
60	Depository Institutions	43,230	45,000	1,770	4.1%
61	Nondepository Institutions	6,930	7,540	610	8.8%
62	Security & Commodity Brokers	8,240	9,450	1,210	14.7%
63	Insurance Carriers	48,600	53,200	4,600	9.5%
64	Insurance Agents, Brokers, & Services	16,250	17,660	1,410	8.7%
65	Real Estate	20,270	22,760	2,490	12.3%
67	Holding & Other Investment Offices	4,550	5,280	730	16.0%

(continued)

Figure 1-44: Detailed Industry Employment Projections (continued)

SIC Code⁽¹⁾	Industry Title	2000 Estimated Employment⁽²⁾	2010 Projected Employment⁽²⁾	2000-2010 Employment Change	2000-2010 Percent Change
I	Services	967,950	1,154,350	186,400	19.3%
70	Hotels & Other Lodging Places	30,770	36,600	5,830	18.9%
72	Personal Services	26,170	29,310	3,140	12.0%
73	Business Services	152,990	181,300	28,310	18.5%
75	Auto Repair Services and Parking	22,040	28,540	6,500	29.5%
76	Miscellaneous Repair Services	5,090	5,380	290	5.7%
78	Motion Pictures	7,730	7,780	50	0.6%
79	Amusement & Recreation Services	31,070	42,790	11,720	37.7%
80	Health Services ⁽⁶⁾	233,240	287,930	54,690	23.4%
81	Legal Services	13,850	17,760	3,910	28.2%
82	Educational Services ⁽⁶⁾	245,780	270,350	24,570	10.0%
83	Social Services	76,420	100,500	24,080	31.5%
84	Museums, Botanical, Zoological Garden	1,420	1,850	430	30.3%
86	Membership Organizations	74,740	86,860	12,120	16.2%
87	Engineering & Management Services	40,650	52,750	12,100	29.8%
88	Private Households	5,540	4,000	(1,540)	-27.8%
89	Services, n.e.c.	440	630	190	43.2%
	Self-Employed and Unpaid Family Workers				
883 ⁽⁷⁾	Self-Employed Workers	170,400	173,540	3,140	1.8%
884 ⁽⁸⁾	Unpaid Family Workers	2,200	1,890	(310)	-14.1%
J	Government	177,580	187,600	10,020	5.6%
	Federal Government ⁽⁵⁾	16,620	16,600	(20)	-0.1%
	State Government, Ex Education & Hospitals ⁽⁹⁾	34,890	36,000	1,110	3.2%
	Local Government, Ex Education & Hospitals ^{(9), (10)}	126,080	135,000	8,920	7.1%

(1) SIC Code is the Standard Industrial Classification Code.

(2) Employment is rounded to the nearest ten. Numbers may not add due to rounding.

(3) Totals include all self-employed and unpaid family workers but only Agricultural Services (SIC 07) from the Agriculture, Forestry and Fishing Industry.

(4) Only Agricultural Services are included from the Agriculture, Forestry, and Fishing Industry.

(5) Postal Service employment was taken out of Federal Government employment and is shown as SIC 43.

(6) Includes State & Local Government employment.

(7) This code is used for occupational projection purposes. This code includes all people who are self-employed, regardless of industry.

(8) This code is used for occupational projection purposes. This code includes all family members who work unpaid in family-owned businesses, regardless of the industry.

(9) State & Local Government employment in Education and Hospitals is removed and included with Educational Services (SIC 82) and Health Services (SIC 80).

(10) Local Government includes Tribal Owned Operations.

Information is derived using the 2001 OES/Wage Survey, 2000 ES-202 and 2000 CES (3/01 Benchmark) data. Unpublished data from the US Bureau of Labor Statistics and US Census Bureau was also used.

To the extent possible, the projections take into account anticipated changes in Wisconsin's economy from 2000 to 2010. It is important to note that unanticipated events may affect the accuracy of these projections.

Source: Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development

NOTES

¹For more information on the SIC system and for descriptions of industries at each code level refer to Executive Office of the President, Office of Management and Budget, *Standard Industrial Classification Manual*, 1987. The manual is available on the internet at <http://www.osha.gov/cgi-bin/sic/sicser5> and <http://www.osha.gov/oshstats/sicser.html>.

All federal-state cooperative programs such as the Current Employment Statistics, Covered Employment and Wages, and the Occupational Employment Statistics are now using the North American Industrial Classification System (NAICS). The Wisconsin Projections for 2002-2012 will also incorporate NAICS. More information about NAICS is found at <http://stats.bls.gov/bls/naics.htm>.

² For occupational employment projection purposes, postal service employment is included as part of transportation employment. However when the historical industry employment data series, such as that in figure 1-35, is presented postal service employment has traditionally been included under government employment. Due to difficulties in separating out postal service employment from federal government employment in the data from earlier years, postal service employment is included with federal government employment when illustrating the historical data series.

³ For occupational employment projection purposes, state and local government employment in hospitals and education is included in health services and educational services. However when the historical industry employment data series, such as that in figure 1-41, is presented state and local government employment in hospitals and education has traditionally been included under government employment. Due to difficulties in separating out state and local government employment in hospitals and education from government employment in data from earlier years, this employment is included under government employment when illustrating the historical data series.

⁴ For occupational employment projections purposes, state and local government employment in hospitals and education is included in health services and educational services. Also, postal service employment is included under transportation employment. However when the historical industry employment data series, such as that in figure 1-43, is presented state and local government employment in hospitals and education, and postal service employment has traditionally been included under government employment. Due to difficulties in separating out state and local government employment in hospitals and education from government employment in data from earlier years, this employment is included under government employment when illustrating the historical data series. As a result, of these different treatments of government employment, it is not possible to list occupations adding and losing jobs under the definition of government presented in Chapter 1.

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Wisconsin Projections 2000 – 2010

Chapter 2: Employment in Occupations

OVERVIEW

How Many Job Openings will there be in Wisconsin?

This chapter examines the types of jobs in Wisconsin's economy and the outlook for these jobs. During the 2000 to 2010 period, Wisconsin is expected to have approximately 1,012,500 job openings for new entrants into one of the state's 753 occupations. About 289,800 of these openings are expected to arise from newly created jobs. The remaining 722,700 openings will be the result of people permanently leaving their occupations due to retirement, death, career change, or some other reason. Overall the number of jobs in the state will increase from about 3.0 to 3.3 million.

What is the Difference between an Occupation and an Industry?

An occupation describes the type of work a person does. Some examples of common occupations are cashiers, electricians, secretaries, registered nurses, and elementary school teachers.

An industry is a distinct group of businesses. Some examples of industries are special trade contractors, paper manufacturing, trucking, health services, and department stores.

Some occupations, such as secretaries and general office clerks, are found in almost every industry. Other occupations, such as roofers and bookbinders, are found in only a few industries.

Likewise, some industries, such as hospitals and local government, employ people in a wide variety of occupations. Other industries, such as non-metallic mineral mining and restaurants, employ people in relatively few occupations.

What Factors Affect Employment in Occupations?

The need for a certain occupation and the type of work performed in that occupation are determined by several factors. These factors include the types of industries present in the economy, the competitiveness of the industries, technology, globalization, laws, business practices, social trends, and demographic trends.

Between 2000 and 2010 employment in some industries and, as a result, in some occupations will decline. The primary metal industry is projected to lose 2,870 jobs. The industrial machinery and equipment industry is projected to lose 5,310 jobs. In terms of occupations, these declines in industry employment translate into an expected loss of 670 team assemblers; 650 cutting, punching, and press machine setters, operators, and tenders; 460 foundry mold and coremakers; and 460 machinists.

Other Wisconsin industries will grow between 2000 and 2010. For example, the lumber and wood products industry is expected to add 2,780 jobs. This growth means an additional 240 sawing machine setters, operators, and tenders, and 240 cabinetmakers and bench carpenters will be needed in this industry.

During the past thirty years, automation has secured a strong footing in most industries. Automation is still affecting employment in numerous occupations, contributing to a decline in some occupations and growth in others. For example, there is a projected decline of 3,880 positions among machine tool cutting setters, operators, and tenders, but a projected increase of 780 jobs for computer control programmers and operators. A major factor in this employment shift is the change from manual cutting and forming to computerized machines.

What Factors Affect the Need for a Certain Occupation? (continued)

In addition, occupations are affected by changing business practices. One trend is the redistribution of responsibilities from one occupation to one or more other occupations. Inspectors, testers, sorters, samplers, and weighers are expected to decline by 1,620 jobs. In addition to automation, the decline is due to shifting of job duties from this occupation to machine operators. Word processors and typists are projected to lose 1,040 positions, as other workers in a wide variety of occupations now produce their own documents.

Another business practice beginning to affect occupational employment is global outsourcing. Although businesses have been outsourcing functions such as housekeeping, advertising, and computer software design for the past two to three decades, until recently they have hired other U.S. businesses to perform these tasks. However, some businesses are now contracting with firms in other countries, such as India and the Philippines, to perform various operations. For example, some companies are globally outsourcing computer support, computer software design, telemarketing, accounting, and insurance claim processing.

The extent of global outsourcing among Wisconsin employers is not known, but it is likely that more employers may consider it as a way to decrease costs. Whether the practice becomes widespread in the U.S., and in Wisconsin, will depend on the political, economic, and social stability of other countries and the willingness of people in the U.S. to accept this practice.¹

Another factor affecting occupations is social trends. The growth in pet ownership, in combination with owners' changing attitudes about pet health care, is increasing the need for veterinarians (expected to increase by 410), veterinary technologists and technicians (expected to increase by 360), and veterinary assistants (expected to increase by 290).

Changing demographics also affect occupational employment. The aging of Wisconsin's population, and the subsequent increase in demand for health services, is contributing to the increase of registered nurses (expected to add 10,670 jobs); nursing aides, orderlies, and attendants (expected to add 7,290 jobs); and home health aides (expected to add 4,240 jobs).

How are Occupations Defined and Classified?

Except as noted in the data tables, this publication defines and classifies occupations using the Standard Occupational Classification (SOC) system.²

The SOC system groups jobs into one of 821 detailed occupations. These occupations are then combined into 449 broad occupations, 96 minor groups, and 23 major groups. The U.S. Bureau of Labor Statistics has further combined the 23 major groups into 10 broad groups.

Although the SOC system identifies 821 detailed occupations only 753 occupations are present in Wisconsin's economy.

What Information is Available about Occupations in this Book?

The following information is available for all 753 occupations. This information is considered when assessing the relative importance of the 10 broad occupational groups and the detailed level occupations presented later.

- 2000 Employment

The estimated number of jobs in the occupation in 2000.

- 2010 Employment

The projected number of jobs in the occupation in 2010.

- Change

The difference in the number of jobs between 2000 and 2010. A positive number means employment is growing due to the creation of new jobs. A negative number means employment is declining in the occupation.

- Percent Change

An indication of how fast employment is expected to increase or decrease between 2000 and 2010. The larger the positive percent change, the faster the occupation is growing. Likewise, the larger the negative percent change, the faster the occupation is declining.

- New Jobs

An estimate of how many net new jobs will be created in an occupation.

- Replacements

An estimate of how many net job openings there will be in each occupation due to people permanently leaving the occupation.

A permanent exit occurs when a person leaves the labor force due to death, retirement, or another decision not to work anymore. A permanent exit from an occupation also occurs when a person leaves a given occupation for a new occupation. For example, a person who is working as a cashier leaves that occupation and gets a job as a truck driver.

Replacements do not include openings that exist because people changed employers but remained in the same occupation. For example, if a person moves from being a cashier at ABC Novelties to being a cashier at XYZ Groceries, the vacancy created at ABC Novelties is not included as a replacement opening.

- Total Openings

An estimate of the total number of jobs that will be available for new entrants into the occupation. This is the sum of new jobs and replacements.

What Information is Available about Occupations in this Book? (continued)

- Education and Training Typically Required

A generalization about the education and training typically required to enter an occupation. Typically required means this is the most common way people are expected to enter the occupation during 2000 to 2010, although there may be other education or training accepted by employers.

The U.S. Bureau of Labor Statistics has identified eleven education and training categories. More information about the education and training categories is found in the next section.

- Average Annual Salary

An estimate of the average amount an occupation pays on a yearly basis.

- Hourly Wage Rate – Middle Range

An estimate of the 25th and 75th percentiles in the hourly wage distribution for an occupation. Fifty percent of the workers in the occupation earn wages in this range. Generally, a person just starting out in this occupation should expect a wage at or below the 25th percentile. A person with several years of experience should expect a wage at or above the 75th percentile.

What are the Education and Training Categories?

The U.S. Bureau of Labor Statistics (BLS) has identified eleven education and training categories.³ Each of Wisconsin's 753 occupations has been assigned to one of these categories according to these BLS guidelines:

1. An occupation is assigned to the category that best describes the education or training needed by most workers to become fully qualified.
2. Postsecondary education, if needed, takes priority over work-related training even though additional skills or experience may be needed for a worker to become fully qualified.
3. If postsecondary education is generally not required, the length of time an average worker needs to become fully qualified through a combination of on-the-job training and experience is used to categorize the occupation.

The education and training categories are described below. In addition, the number of occupations and anticipated job openings in each category is included with the description. This information is also depicted in figures 2-1 and 2-2.

Short-Term On-The-Job Training

These occupations require no more than one month of on-the-job training and the training usually happens at the workplace.

Short-term training is common in 144 occupations. Included in this category are cashiers, home health aides, retail salespeople, and plumbers helpers. These occupations will account for nearly 438,000 job openings between 2000 and 2010.

**Figure 2-1:
Education and Training Categories, by Number of Occupations and Job Openings
2000 to 2010**

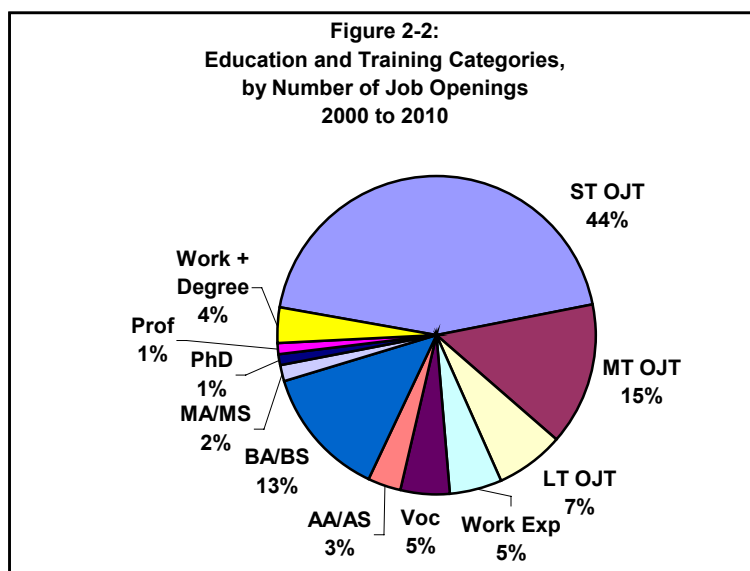
Source of Education or Training ⁽¹⁾	Number of Titles	Percentage of Titles	Number of Job Openings	Percentage of Job Openings
Short-Term On-The-Job Training (ST OJT)	144	19%	437,560	43%
Moderate-Term On-The-Job Training (MT OJT)	161	21%	149,840	15%
Long-Term On-The-Job Training (LT OJT)	86	11%	70,220	7%
Work Experience in a Related Occupation (Work Exp)	45	6%	53,970	5%
Postsecondary Vocational Award (Voc)	52	7%	52,410	5%
Associate Degree (AA/AS)	37	5%	34,240	3%
Bachelor's Degree (BA/BS)	120	16%	136,020	13%
Master's Degree (MA/MS)	31	4%	17,360	2%
Doctoral Degree (PhD)	41	5%	11,890	1%
First Professional Degree (Prof)	9	1%	10,830	1%
Bachelor's or Higher Degree, Plus Work Experience (Work + Degree)	27	4%	38,420	4%
Total	753		1,012,760	

⁽¹⁾ Each occupation is assigned to the education or training category typically required to enter the occupation. However, there may be other education or training accepted by employers.

Information derived using data from 2001 OES, 2000 ES-202 and 2000 CES (3/01 Benchmark). Unpublished data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau was also used.

Source: Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development

**Figure 2-2:
Education and Training Categories,
by Number of Job Openings
2000 to 2010**



Information derived using data from 2001 OES, 2000 ES-202 and 2000 CES (3/01 Benchmark). Unpublished data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau was also used.

Source: Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development

What are the Education and Training Categories? (continued)

Moderate-Term On-The-Job Training

Training for these occupations usually occurs at the workplace and lasts from one to twelve months.

There are 161 occupations in this category and they will account for almost 150,000 job openings. Occupations included in this group are pharmacy technicians, insurance claims clerks, roofers, and multiple machine tool operators.

Long-Term On-The-Job Training

These occupations require more than one year of on-the-job training, or combined work experience and formal classroom instruction. This training is often in the form of an adult apprenticeship.

Long-term on-the-job training is common in 86 occupations. These occupations will account for just over 70,000 job openings between 2000 and 2010. Dispensing opticians, fire fighters, telecommunications line installers, and electricians are examples of occupations in this category.

Work Experience in a Related Occupation

Occupations in this category require skills and experience gained in related jobs. Entry into some of these occupations may result from promotion within a company. Many of these occupations are supervisory positions.

Work experience in a related occupation is required in 45 occupations. These occupations represent almost 54,000 job openings. Examples of occupations in this group are first-line supervisors of retail sales workers, fire inspectors, concierges, and new account clerks.

Post-Secondary Vocational Award

These formal training programs last from a few weeks to more than a year, and are offered at vocational or technical schools. These programs lead to a certificate or other award, but not to a degree.

There are 52 occupations that require a post-secondary vocational award. These occupations will have about 52,000 job openings. Included in this category are surgical technologists, chefs, cosmetologists, and automotive mechanics.

Associate Degree

This degree usually requires two years of full-time academic work beyond high school. Most associate degree programs are at technical or community colleges.

There are 37 occupations that require an associate degree. These occupations will account for just over 34,000 job openings. These occupations include biological technicians, paralegals, civil engineering technologists, and respiratory therapists.

Bachelor's Degree

A bachelor's degree requires four or five years of full-time academic work at a college or university.

In Wisconsin, 120 occupations generally require a bachelor's degree. These occupations will account for 136,000 job openings between 2000 and 2010. Examples of occupations requiring a bachelor's degree are computer systems analysts, elementary school teachers, physician assistants, and accountants.

What are the Education and Training Categories? (continued)

Master's Degree

A master's degree requires one to two years of full-time study beyond a bachelor's degree.

There are 31 occupations requiring a master's degree. These occupations will account for over 17,000 openings. A master's is needed to be a librarian, an audiologist, an operations research analyst, or a rehabilitation counselor.

Doctoral Degree

This degree usually requires at least three years of full-time study beyond a bachelor's degree. A doctoral degree is often needed to teach at the university level or to do advanced research in a business, government, or academic setting.

There are 41 occupations requiring a doctoral degree. These occupations will account for just under 12,000 job openings. Some examples of occupations generally requiring a doctorate are physicists, university professors, biochemists, and epidemiologists.

First Professional Degree

These degrees typically require at least three years of full-time study beyond a bachelor's degree. These degrees include law and medical school degrees.

In Wisconsin, 9 occupations usually require a first professional degree. These occupations will have nearly 11,000 job openings. Occupations in this category include veterinarians, lawyers, physicians, and pharmacists.

Bachelor's or Higher Degree, Plus Work Experience

These occupations require a bachelor's or higher degree, in addition to work experience in a related non-managerial position. Most of these occupations are managerial or executive positions.

There are 27 occupations in this category. These occupations will account for about 38,000 openings. Examples of occupations in this category are judges, financial managers, purchasing managers, and education administrators.

What Type of Education and Training will be Needed for Most Jobs?

In order to fill the job openings that will exist during the next ten years, Wisconsin needs people with a wide variety of interests, aptitudes, and educational/training backgrounds.

Most occupations, and most of the projected job openings from 2000 to 2010, will not require people to have substantial formal education beyond high school (see figure 2-2). Nearly eight out of every ten job openings (78%) will require less than a bachelor's degree. Over half (58%) of the openings will require only short- or moderate-term on-the-job training.

Figure 2-11, which begins on page 80, lists the education and training typically required for each of Wisconsin's occupations.

EMPLOYMENT BY BROAD OCCUPATIONAL GROUP

Occupations are grouped into ten broad groups (see figure 2-3) depending upon the type of work performed. The groups are

- Management, business, and financial
- Professional and related
- Service
- Sales and related
- Office and administrative support
- Farming, fishing, and forestry
- Construction and extraction
- Installation, maintenance, and repair
- Production
- Transportation and material moving

For a list of occupations that fall into each broad group, refer to figure 2-11.

Figure 2-3: Employment by Broad Occupational Group - 2000 to 2010							
Occupational Title	Estimated Employment ⁽¹⁾				Estimated Average Annual Openings		
	2000	2010	Change	Percent Change	New Jobs	Replacements ⁽²⁾	Total
Total, All Occupations	3,011,380	3,301,160	289,780	9.6%	28,980	72,270	101,250
Management, business, financial	241,190	268,000	26,810	11.1%	2,690	4,420	7,110
Professional and related	544,930	645,180	100,250	18.4%	10,030	10,900	20,930
Service	526,430	614,780	88,350	16.8%	8,840	16,580	25,410
Sales and related	304,430	329,880	25,440	8.4%	2,540	9,870	12,410
Office and administrative support	476,230	495,230	19,000	4.0%	1,900	10,160	12,060
Farming, fishing, forestry	5,990	6,460	470	7.8%	50	150	200
Construction and extraction	146,680	159,960	13,280	9.1%	1,330	2,730	4,060
Installation, maintenance, repair	117,130	124,780	7,650	6.5%	770	2,550	3,310
Production	415,890	407,430	(8,460)	-2.0%	0	9,610	9,610
Transportation and material moving	232,480	249,470	16,990	7.3%	1,700	5,310	7,010

⁽¹⁾Employment includes self-employed and unpaid family workers. Employment is rounded to the nearest 10. Totals may not add due to rounding.

⁽²⁾Replacements are an estimate of the net number of job openings expected because people have permanently left a given occupation.

Information derived using data from 2001 OES, 2000 ES-202 and 2000 CES (3/01 Benchmark). Unpublished data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau was also used.

Source: Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development

Professional and Related Occupations Dominate Total Employment and New Job Creation

Based on employment size and projected new job creation, the professional group is the dominant category. This group includes 249 occupations such as database administrators, chemical engineers, psychologists, social workers, lawyers, teachers, musicians, physicians, and pharmacy technicians.

With nearly 545,000 jobs, this group accounted for 18% of all jobs in 2000. In 2010, the professional group is expected to remain the largest category, and will have about 645,000 jobs or 20% of all jobs.

In addition, with growth of over 100,000 new jobs, this group will account for one third of new jobs. Also, with about 209,000 openings, or 21% of the total, this group will have the second most total job openings from 2000 to 2010.

Occupations in the professional and related group are concentrated in three of Wisconsin's largest industries – health services, educational services, and business services. Overall, teaching and health care occupations account for about 50% of the employment in this category.

Three particular occupations – registered nurses, elementary school teachers, and secondary school teachers – make up nearly 20% of total group employment. These three occupations are also projected to add 17% of the new jobs in the group and have 20% of total job openings.

Service Occupations Lead in Replacement Openings and Total Job Openings

Service occupations are another important category. This group has 92 occupations which include home health aides, police officers, chefs, janitors, cosmetologists, flight attendants, and child care workers.

This group had the second largest number of jobs in 2000 and is expected to remain in second place in 2010. In 2000 this group had approximately 526,000 jobs. Between 2000 and 2010, the group will add about 88,000 new jobs growing to a total of just under 615,000 jobs.

This category is expected to have about 166,000 jobs open due to replacements which is the largest number among the broad groups. The large number of replacement openings, in combination with a sizeable number of new jobs, will lead the service occupations group to have the greatest number of total job openings with 254,000.

This group's occupations are concentrated in health, business, and social services; eating and drinking places; and state and local government. The three largest occupations are janitors and cleaners; combined food preparation and serving workers; and nursing aides, orderlies, and attendants. Within the services category, these occupations are expected to account for 26% of total 2010 employment, 28% of new jobs, and 25% of replacement openings.

Production Occupations are Expected to Lose Jobs

Although production occupations will remain the fourth largest group, this category is the only one projected to experience a net decline in employment. With a fall of about 8,500 jobs, employment in this group is expected to decrease from just under 416,000 to just over 407,000. Despite the lack of net new job creation, there will still be about 96,000 job openings in the category due to replacement needs.

Production occupations are concentrated in manufacturing. In 2010, the largest employers of production workers are expected to be industrial machinery and equipment; fabricated metal products; and food and kindred products. These three industries employ one out of every three production workers. However, only food and kindred products is expected to add new production jobs during 2000 to 2010.

Production Occupations are Expected to Lose Jobs (continued)

Although many manufacturers will be cutting back on production workers, some will be adding new jobs. The three industries projected to add the most new production jobs are furniture and fixtures (1,500); lumber and wood products (1,500); and food and kindred products (1,000).

The three production occupations expected to add the most new jobs are welders, cutters, solderers, and brazers (1,320); packaging and filling machine operators and tenders (830); and computer-controlled machine tool operators (730).

The three production occupations expected to have the most job openings overall are team assemblers (9,500); first-line supervisors/managers of production and operating workers (6,500); and welders, cutters, solderers, and brazers (5,800). However, only the welders, cutters, solderers, and brazers will be adding new jobs. In the other two occupations all of the expected openings are due to replacement openings.

EMPLOYMENT TRENDS IN SELECTED OCCUPATIONS

Employment in the ten broad occupational categories is further broken down into 753 occupations. The entire table of occupations is found at the end of this chapter in figure 2-11. The following sections concentrate on occupations with the largest employment in 2010, most new jobs, most total job openings, and fastest growth rates. Also, there are examinations of occupations expected to experience net declines in employment and occupations among the self-employed.

Largest Occupations in 2010

Figure 2-4 lists thirty occupations expected to have the greatest number of jobs in 2010. The largest occupation, retail salespersons, will account for about 98,300 jobs in 2010. The 30th largest occupation, bartenders will have about 25,530 jobs. Overall, these thirty occupations are expected to account for 35% of total 2010 employment and 42% of job openings from 2000 to 2010.

These thirty occupations represent all of the broad occupational groups, except for farming, fishing, and forestry. Eight are in office and administrative support. Six are service occupations. Four each are in transportation and moving occupations or sales occupations. Most of the jobs on the list can be learned through on-the-job training.

Occupations Adding the Most New Jobs

Figure 2-5 shows the thirty occupations projected to add the most new jobs by 2010. The number of new jobs anticipated range from combination food preparation/serving workers, which is projected to add 12,130 jobs, to first-line supervisors/managers of retail sales workers, which is expected to add 2,560 positions.

Overall these thirty occupations are expected to add 153,020 new jobs to Wisconsin's labor market. These new jobs account for 53% of the total new jobs anticipated. Eight of the occupations require at least two-years of college, while twenty only require short- or moderate-term on-the-job training.

Figure 2-4: Largest Occupations in 2010

Occ Code ⁽¹⁾	Occupational Title	2010 Projected Employment ⁽²⁾	2000-2010 Job Openings ⁽³⁾	Education and Training ⁽⁴⁾	Average Annual Salary
412031	Retail Salespersons	98,300	42,900	Short-term OJT	\$20,450
412011	Cashiers	78,870	40,000	Short-term OJT	15,780
353021	Combination Food Preparation/Serving Workers	57,290	39,800	Short-term OJT	15,730
291111	Registered Nurses	57,200	20,100	Bachelor's degree ⁽⁵⁾	46,750
372011	Janitors/Cleaners Except Maids/Housekeeping	57,050	14,600	Short-term OJT	20,140
439061	Office Clerks, General	56,660	14,900	Short-term OJT	22,560
533032	Truck Drivers, Heavy/Tractor-Trailer	53,900	11,400	Moderate-term OJT	35,670
512092	Team Assemblers	53,450	9,500	Moderate-term OJT	25,150
537062	Laborers, Freight/Stock/Material Movers, Hand	48,860	17,000	Short-term OJT	21,850
434051	Customer Service Representatives	48,820	12,700	Moderate-term OJT	28,310
311012	Nursing Aides/Orderlies/Attendants	47,590	12,400	Short-term OJT	20,730
353031	Waiters/Waitresses	45,500	28,400	Short-term OJT	14,230
111021	General/Operations Managers	41,270	9,800	Work exp + degree	72,180
411011	First-Line Supervisors/Mgrs, Retail Sales Wkrs	40,550	8,100	Work experience	34,290
433031	Bookkeeping/Accounting/Auditing Clerks	40,230	7,800	Moderate-term OJT	26,060
435081	Stock Clerks/Order Fillers	38,960	14,400	Short-term OJT	20,730
436014	Secretaries, Except Legal/Medical/Executive	35,580	6,400	Moderate-term OJT	24,400
414012	Sales Reps, Wholesale/Mfg, Except Technical	35,100	10,200	Moderate-term OJT	49,240
436011	Exec Secretaries/Administrative Assistants	33,600	7,100	Moderate-term OJT	29,500
537064	Packers/Packagers, Hand	31,340	10,200	Short-term OJT	19,710
252021	Elementary School Teachers, Ex Special Educ	31,050	9,100	Bachelor's degree	41,850
259041	Teacher Assistants	31,040	10,500	Associate degree	19,890
252031	Secondary School Teachers, Ex Special Educ	29,160	12,700	Bachelor's degree	42,210
431011	First-Line Supervisors/Mgrs, Office/Admin	28,980	7,200	Work experience	40,650
472031	Carpenters	28,920	5,900	Long-term OJT	35,820
499042	Maintenance/Repair Workers, General	28,890	4,100	Long-term OJT	31,370
533033	Truck Drivers, Light or Delivery Services	27,910	6,100	Short-term OJT	23,600
434171	Receptionists/Information Clerks	27,000	9,100	Short-term OJT	20,920
372012	Maids/Housekeeping Cleaners	25,930	10,100	Short-term OJT	16,960
353011	Bartenders	25,530	11,400	Short-term OJT	16,240

⁽¹⁾The occupational (Occ) codes are based on the Standard Occupational Classification (SOC) codes, except where noted.

⁽²⁾Employment includes self-employed and unpaid family workers. Employment is rounded to the nearest ten.

⁽³⁾Job openings include both newly created jobs and replacement openings.

⁽⁴⁾Education and training indicates the most common way people are expected to enter the occupation. There may be other education and training accepted by employers. OJT means on-the-job training.

⁽⁵⁾Depending on the specific position and employer either a bachelor's degree or an associate degree are most often required.

Information derived using data from 2001 OES, 2000 ES-202 and 2000 CES (3/01 Benchmark). Unpublished data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau was also used.

Source: Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development

Figure 2-5: Occupations Adding the Most New Jobs

Occ Code⁽¹⁾	Occupational Title	2000-2010 New Jobs⁽²⁾	Education and Training⁽³⁾	Average Annual Salary
353021	Combination Food Preparation/Serving Workers	12,130	Short-term OJT	\$15,730
291111	Registered Nurses	10,670	Bachelor's degree ⁽⁴⁾	46,750
434051	Customer Service Representatives	9,280	Moderate-term OJT	28,310
412031	Retail Salespersons	8,870	Short-term OJT	20,450
412011	Cashiers	7,730	Short-term OJT	15,780
311012	Nursing Aides/Orderlies/Attendants	7,290	Short-term OJT	20,730
353031	Waiters/Waitresses	6,400	Short-term OJT	14,230
151041	Computer Support Specialists	6,010	Associate degree	39,840
399021	Personal/Home Care Aides	5,870	Short-term OJT	18,060
151051	Computer Systems Analysts	5,270	Bachelor's degree	70,090
372011	Janitors/Cleaners Except Maids/Housekeeping	5,150	Short-term OJT	20,140
439061	Office Clerks, General	4,950	Short-term OJT	22,560
259041	Teacher Assistants	4,950	Associate degree	19,890
372012	Maids/Housekeeping Cleaners	4,920	Short-term OJT	16,960
533032	Truck Drivers, Heavy/Tractor-Trailer	4,590	Moderate-term OJT	35,670
311011	Home Health Aides	4,240	Short-term OJT	19,010
373011	Landscaping/Groundskeeping Workers	4,080	Short-term OJT	21,550
434171	Receptionists/Information Clerks	3,990	Short-term OJT	20,920
252031	Secondary School Teachers, Ex Special Education	3,710	Bachelor's degree	42,210
395012	Hairdressers/Hairstylists/Cosmetologists	3,420	Postsecondary vocational training	22,320
111021	General/Operations Managers	3,370	Work exp + degree	72,180
319092	Medical Assistants	3,260	Moderate-term OJT	25,050
211093	Social/Human Service Assistants	3,240	Moderate-term OJT	24,810
339030	Security Guards/Gaming Surveillance Officers	3,130	Short-term OJT	19,640
399010	Child Care Workers	3,050	Short-term OJT	16,820
537064	Packers/Packagers, Hand	2,990	Short-term OJT	19,710
252021	Elementary School Teachers, Ex Special Education	2,700	Bachelor's degree	41,850
533033	Truck Drivers, Light or Delivery Services	2,630	Short-term OJT	23,600
132011	Accountants/Auditors	2,570	Bachelor's degree	47,850
411011	First-Line Supervisors/Managers, Retail Sales Wkrs	2,560	Work experience	34,290

⁽¹⁾The occupational (Occ) codes are based on the Standard Occupational Classification (SOC) codes, except where noted.

⁽²⁾Includes new jobs among the self-employed and unpaid family workers. The number of jobs is rounded to the nearest ten.

⁽³⁾Education and training indicates the most common way people are expected to enter the occupation. There may be other education and training accepted by employers. OJT means on-the-job training.

⁽⁴⁾Depending on the specific position and employer either a bachelor's degree or an associate degree are most often required.

Information derived using data from 2001 OES, 2000 ES-202 and 2000 CES (3/01 Benchmark). Unpublished data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau was also used.

Source: Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development

Occupations with the Most Job Openings

Figure 2-6 shows the thirty occupations projected to have the most job openings. Job openings consist of new jobs plus replacement openings.

Replacement openings exist because people have retired, died, or otherwise left the work force. Replacements also include openings arising from people who permanently change occupations. For example, a person who has a job as a nursing aide leaves that occupation and becomes a security guard.

Replacements do not include openings that exist because people changed employers but remained in the same occupation. For example, if a person moves from being a waiter/waitress at Cool Cafe to being a waiter/waitress at Fun Foods, the vacancy created at Cool Cafe is not included as a replacement opening.

Retail salespersons top the list with an expected 42,900 openings. Personal/home care aides, and child care workers round out the list with each occupation projected to have 7,600 openings. Overall these thirty occupations are expected to have nearly 433,000 openings. These openings represent 43% of Wisconsin's projected job openings.

Several of the occupations on the list, such as cashiers, waiters/waitresses, and hand packers/packageers, are lower paying jobs that are learned through on-the-job training. Many people who take these jobs later move on to a higher paying occupation that also offers more career opportunities. As a result these occupations have a large number of job openings due to replacements.

In addition, most of the occupations have more openings due to replacements than to new jobs. Exceptions are registered nurses; customer service representatives; nursing aides/orderlies/attendants; maids/housekeeping cleaners; landscaping/groundskeeping workers; and personal/home care aides.

Fastest Growing Occupations with at Least 500 Jobs

Figure 2-7 lists the thirty fastest growing occupations, based on percentage change in employment between 2000 and 2010. The larger the percentage change the faster the occupation is growing. Only occupations with at least 500 jobs in 2000 are included in the rankings.

Computer software engineers, systems software are projected to grow the fastest. This occupation is expected to increase from 2,220 to 3,820 jobs for a change of 72 percent. The thirtieth occupation is dental hygienists. This occupation is expected to grow from 3,000 to 3,980, a change of 33 percent.

The list is dominated by occupations linked to health care and computers. Fourteen occupations are health care related. Nine of the occupations, six of which rank in the top ten, are computer related. In contrast to the lists of the occupations with the largest employment, most job openings, and most new jobs, most (seventeen) of the fastest growing occupations require at least an associate degree and are relatively high paying.

Although the occupations in this list are growing at a fast rate, it should be noted these thirty occupations will represent only 5% of total employment in 2010, 7% of total job openings from 2000 to 2010, and 17% of new jobs.

Figure 2-6: Occupations with the Most Job Openings

Occ Code⁽¹⁾	Occupational Title	2000-2010 Job Openings⁽²⁾	Education and Training⁽³⁾	Average Annual Salary
412031	Retail Salespersons	42,900	Short-term OJT	\$20,450
412011	Cashiers	40,000	Short-term OJT	15,780
353021	Combined Food Preparation/Serving Workers	39,800	Short-term OJT	15,730
353031	Waiters/Waitresses	28,400	Short-term OJT	14,230
291111	Registered Nurses	20,100	Bachelor's degree ⁽⁴⁾	46,750
537062	Laborers/Freight/Stock/Material Movers, Hand	17,000	Short-term OJT	21,850
439061	Office Clerks/General	14,900	Short-term OJT	22,560
372011	Janitors/Cleaners Except Maids/Housekeeping	14,600	Short-term OJT	20,140
435081	Stock Clerks/Order Fillers	14,400	Short-term OJT	20,730
434051	Customer Service Representatives	12,700	Moderate-term OJT	28,310
311012	Nursing Aides/Orderlies/Attendants	12,400	Short-term OJT	20,730
533032	Truck Drivers, Heavy and Tractor-Trailer	11,400	Moderate-term OJT	35,670
252031	Secondary School Teachers, Ex Special Education	11,400	Bachelor's degree	42,210
353011	Bartenders	11,400	Short-term OJT	16,240
259041	Teacher Assistants	10,500	Associate degree	19,890
414012	Sales Reps, Wholesale/Mfg Except Technical	10,200	Moderate-term OJT	49,240
537064	Packers/Packagers, Hand	10,200	Short-term OJT	19,710
111021	General and Operations Managers	9,800	Work exp + degree	72,180
512092	Team Assemblers	9,500	Moderate-term OJT	25,150
372012	Maids/Housekeeping Cleaners	9,500	Short-term OJT	16,960
252021	Elementary School Teachers, Ex Special Education	9,100	Bachelor's degree	41,850
434171	Receptionists/Information Clerks	9,100	Short-term OJT	20,920
352021	Food Preparation Workers	8,300	Short-term OJT	16,980
411011	First-Line Supervisors/Mgrs, Retail Sales Workers	8,100	Work exp	34,290
373011	Landscaping/Groundskeeping Workers	8,100	Short-term OJT	21,550
395012	Hairdressers/Hairstylists/Cosmetologists	8,000	Postsecondary vocational training	22,320
433031	Bookkeeping/Accounting/Auditing Clerks	7,800	Moderate-term OJT	26,060
353022	Counter Attends, Cafeteria/Concession/Coffee Shop	7,700	Short-term OJT	14,910
399021	Personal/Home Care Aides	7,600	Short-term OJT	18,060
399010	Child Care Workers	7,600	Short-term OJT	16,820

⁽¹⁾The occupational (Occ) codes are based on the Standard Occupational Classification (SOC) codes, except where noted.

⁽²⁾Includes job openings for the self-employed and unpaid family workers. The number of jobs is rounded to the nearest ten.

⁽³⁾Education and training indicates the most common way people are expected to enter the occupation. There may be other education and training accepted by employers. OJT means on-the-job training.

⁽⁴⁾Depending on the specific position and employer either a bachelor's degree or an associate degree are most often required.

Information derived using data from 2001 OES, 2000 ES-202 and 2000 CES (3/01 Benchmark). Unpublished data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau was also used.

Source: Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development

Figure 2-7: Fastest Growing Occupations

Occ Code⁽¹⁾	Occupational Title	2000-2010 Percent Change	2000-2010 New Jobs⁽²⁾	Education and Training⁽³⁾	Average Annual Salary
151032	Computer Software Engineers, Systems Soft	72.1%	1,600	Bachelor's degree	\$60,290
151041	Computer Support Specialists	71.4%	6,010	Associate degree	39,840
151031	Computer Software Engineers, Applications	62.8%	2,030	Bachelor's degree	62,790
151071	Network/Computer Systems Administrators	57.1%	2,290	Bachelor's degree	48,940
439031	Desktop Publishers	54.8%	690	Postsecondary vocational	33,270
292071	Medical Records/Health Information Techs	53.5%	1,760	Associate degree	24,060
151081	Network Systems/Data Comm Analysts	53.3%	1,130	Bachelor's degree	47,950
399021	Personal/Home Care Aides	52.4%	5,870	Short-term OJT	18,060
319092	Medical Assistants	51.7%	3,260	Moderate-term OJT	25,050
291071	Physician Assistants	51.2%	440	Bachelor's degree	70,950
211093	Social/Human Service Assistants	47.4%	3,240	Moderate-term OJT	24,810
151061	Database Administrators	45.6%	730	Bachelor's degree	50,550
412012	Gaming Change/Booth Cashiers	44.7%	380	Short-term OJT	18,410
399031	Fitness Trainers/Aerobics Instructors	42.0%	1,150	Postsecondary vocational	22,170
312022	Physical Therapist Aides	40.3%	270	Short-term OJT	21,420
151051	Computer Systems Analysts	40.2%	5,270	Bachelor's degree	70,090
434081	Hotel/Motel/Resort Desk Clerks	38.9%	1,700	Short-term OJT	17,050
312021	Physical Therapist Assistants	38.7%	460	Associate degree	33,100
312011	Occupational Therapist Assistants	36.7%	220	Associate degree	32,780
292031	Cardiovascular Technologists/Technicians	35.7%	250	Associate degree	34,790
311011	Home Health Aides	35.4%	4,240	Short-term OJT	19,010
291127	Speech-Language Pathologists	34.8%	790	Master's degree	48,040
292054	Respiratory Therapy Technicians	34.5%	190	Postsecondary vocational	35,470
395092	Manicurists/Pedicurists	34.5%	190	Postsecondary vocational	19,990
291126	Respiratory Therapists	34.5%	500	Associate degree	39,420
319091	Dental Assistants	33.9%	1,960	Moderate-term OJT	24,150
319096	Vet Assistants/Lab Animal Caretakers	33.8%	230	Short-term OJT	17,950
113021	Computer/Info Systems Mgrs	33.7%	1,730	Work plus degree	72,820
292056	Veterinary Technologists/Technicians	33.0%	360	Associate degree	23,020
292021	Dental Hygienists	32.7%	980	Associate degree	49,270

⁽¹⁾The occupational (Occ) codes are based on the Standard Occupational Classification (SOC) codes, except where noted.

⁽²⁾Includes new jobs among the self-employed and unpaid family workers. The number of jobs is rounded to the nearest ten.

⁽³⁾Education and training indicates the most common way people are expected to enter the occupation. There may be other education and training accepted by employers. OJT means on-the-job training.

Information derived using data from 2001 OES, 2000 ES-202 and 2000 CES (3/01 Benchmark). Unpublished data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau was also used.

Source: Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development

Occupations Losing the Most Jobs

The thirty occupations expected to lose the most jobs between 2000 and 2010 are illustrated in figure 2-8. About 27,890 jobs will be lost due to employment declines in these thirty occupations. These occupations account for 67% of the 41,490 jobs expected to be lost in Wisconsin overall. Most of the occupations in decline are concentrated in manufacturing.

The occupation losing the most jobs is cutting, punching, and press machine setters, operators, and tenders, estimated to lose 2,290 jobs. Thirtieth on the list is engine and other machine equipment assemblers, projected to lose 380 jobs.

Although employment in these occupations will be decreasing, it is important to note an estimated 85,200 job openings will still exist in this group. These openings will result from retirements and other permanent exits from the occupations.

Occupations Among the Self-Employed

Self-employed workers are defined as owners of nonfarm, unincorporated, businesses who rely on their business' profits for their main source of income.

People who earn most of their income from a nonfarm wage or salary job and who also own an unincorporated business are not included as self-employed. The jobs these people hold are counted under the wage or salary job they hold.

Also excluded from self-employed are owners of nonfarm incorporated businesses. These people are counted under the function they perform for the corporation (such as general manager, financial manager, etc.)

In 2000 there were an estimated 170,580 self-employed people. By 2010, the number is expected to grow by just over 3,000 to 173,540.

Figure 2-9 lists the thirty occupations expected to add the most self-employed. Hairdressers, hairstylists, and cosmetologists will add the most. This group is expected to grow from 8,920 to 10,820. Property real estate, and community association managers, ranked 30th, will grow from 1,150 to 1,250. Overall these thirty occupations will account for about 36% of the jobs held by the self-employed in 2010.

The occupations expected to lose the most self-employed between 2000 and 2010 are listed in figure 2-10. Bookkeeping, accounting, and auditing clerks will decline the most going from 3,270 to 2,330. Printing machine operators are among four occupations that will drop 70 self-employed.

Figure 2-8: Occupations Losing the Most Jobs

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽²⁾		Net Job Loss	Education and Training ⁽³⁾	Average Annual Salary
		2000	2010			
514031	Cut/Punch/Press Machine Set/Op/Tenders/	14,400	12,110	(2,290)	Moderate-term OJT	\$26,700
439041	Insurance Claims/Policy Processing Clerks	9,270	7,230	(2,040)	Moderate-term OJT	26,290
434151	Order Clerks	10,790	8,860	(1,930)	Short-term OJT	23,730
436014	Secretaries/Except Legal/Medical/Executive	37,390	35,580	(1,810)	Moderate-term OJT	24,400
519061	Inspectors/Testers/Sorters/Samplers/Weighers	15,240	13,620	(1,620)	Moderate-term OJT	29,020
359021	Dishwashers	12,340	10,950	(1,390)	Short-term OJT	14,240
512022	Electrical/Electronic Equipment Assemblers	9,740	8,630	(1,110)	Short-term OJT	24,300
439022	Word Processors/Typists	4,100	3,060	(1,040)	Moderate-term OJT	25,590
537063	Machine Feeders/Offbearers	6,310	5,300	(1,010)	Short-term OJT	23,170
512092	Team Assemblers	54,430	53,450	(980)	Moderate-term OJT	25,150
433031	Bookkeeping/Accounting/Auditing Clerks	41,210	40,230	(980)	Moderate-term OJT	26,060
432011	Switchboard Operators, Inc Answering Service	4,670	3,730	(940)	Short-term OJT	20,930
511011	F-L Supervisors/Mgrs, Prod/Oper Workers	24,790	23,870	(920)	Work experience	46,360
434131	Loan Interviewers/Clerks	3,460	2,560	(900)	Short-term OJT	26,690
439011	Computer Operators	4,010	3,190	(820)	Moderate-term OJT	28,600
515022	Prepress Technicians and Workers	4,100	3,330	(770)	Long-term OJT	33,480
359011	Dining Room/Cafeteria Attendants/Bar Helpers	8,770	8,010	(760)	Short-term OJT	14,660
514034	Lathe/Turning Machine Tool Set/Op/Tenders	4,260	3,550	(710)	Moderate-term OJT	31,270
439021	Data Entry Keyers	7,820	7,120	(700)	Moderate-term OJT	21,570
514111	Tool and Die Makers	6,860	6,270	(590)	Long-term OJT	42,020
419091	Door Sales/News/Street Vendors/Related Wkrs	3,180	2,590	(590)	Short-term OJT	19,770
514041	Machinists	15,540	15,030	(510)	Long-term OJT	34,740
514071	Foundry Mold and Coremakers	2,560	2,060	(500)	Moderate-term OJT	25,650
519198	Helpers--Production Workers	16,330	15,870	(460)	Short-term OJT	22,390
516031	Sewing Machine Operators	4,560	4,100	(460)	Moderate-term OJT	20,690
433071	Tellers	13,580	13,140	(440)	Short-term OJT	19,530
172112	Industrial Engineers	4,580	4,160	(420)	Bachelor's degree	57,850
412022	Parts Salespersons	5,220	4,810	(410)	Moderate-term OJT	27,390
514032	Drilling/Boring Machine Tool Set/Op/Tenders	2,550	2,140	(410)	Moderate-term OJT	28,960
512031	Engine/Other Machine Assemblers	3,770	3,390	(380)	Short-term OJT	33,700

⁽¹⁾The occupational (Occ) codes are based on the Standard Occupational Classification (SOC) codes, except where noted.

⁽²⁾Includes self-employed and unpaid family workers. Employment is rounded to the nearest ten.

⁽³⁾Education and training indicates the most common way people are expected to enter the occupation. There may be other education and training accepted by employers. OJT means on-the-job training.

Information derived using data from 2001 OES, 2000 ES-202 and 2000 CES (3/01 Benchmark). Unpublished data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau was also used.

Source: Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development

Figure 2-9: Occupations with Greatest Growth in Self-Employment

Occ Code ⁽¹⁾	Occupational Title	Estimated Self-Employed		Growth	Percent Change
		2000	2010		
395012	Hairdressers/Hairstylists/Cosmetologists	8,920	10,820	1,900	21.3%
399010	Child Care Workers	4,940	5,840	900	18.2%
471011	F-L Supervisors/Managers, Construction Trades/Extraction	4,480	5,300	820	18.3%
472141	Painters, Construction/Maintenance	3,630	4,320	690	19.0%
151051	Computer Systems Analysts	1,030	1,440	410	39.8%
272042	Musicians/Singers	1,360	1,750	390	28.7%
131111	Management Analysts	1,590	1,890	300	18.9%
413031	Securities/Commodities/Financial Services Sales Agents	1,020	1,320	300	29.4%
193031	Clinical/Counseling/School Psychologists	1,460	1,740	280	19.2%
371012	F-L Supervisors/Managers, Land/Lawn/Grounds Workers	1,020	1,290	270	26.5%
291011	Chiropractors	1,090	1,310	220	20.2%
499021	Heating/AC/Refrigeration Mechanics/Installers	730	950	220	30.1%
311012	Nursing Aides/Orderlies/Attendants	1,240	1,450	210	16.9%
132011	Accountants/Auditors	1,870	2,070	200	10.7%
472041	Carpet Installers	960	1,160	200	20.8%
132052	Personal Financial Advisors	650	820	170	26.2%
271024	Graphic Designers	1,480	1,650	170	11.5%
472181	Roofers	1,000	1,170	170	17.0%
273043	Writers/Authors	1,460	1,620	160	11.0%
291111	Registered Nurses	450	610	160	35.6%
274021	Photographers	910	1,060	150	16.5%
119051	Food Service Managers	2,580	2,720	140	5.4%
132072	Loan Officers	460	600	140	30.4%
413021	Insurance Sales Agents	2,930	3,070	140	4.8%
111021	General/Operations Managers	1,310	1,430	120	9.2%
113051	Industrial Production Managers	1,310	1,430	120	9.2%
119081	Lodging Managers	850	970	120	14.1%
119111	Medical/Health Services Managers	320	440	120	37.5%
119151	Social/Community Service Managers	710	830	120	16.9%
119141	Property/Real Estate/Community Association Managers	1,150	1,250	100	8.7%

⁽¹⁾The occupational (Occ) codes are based on the Standard Occupational Classification (SOC) codes, except where noted.

Employment is rounded to the nearest ten.

Information derived using data from 2001 OES, 2000 ES-202 and 2000 CES (3/01 Benchmark). Unpublished data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau was also used.

Source: Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development

Figure 2-10: Occupations with Greatest Decline in Self-Employment

Occ Code ⁽¹⁾	Occupational Title	Estimated Self-Employed		Job Loss	Percent Change
		2000	2010		
433031	Bookkeeping/Accounting/Auditing Clerks	3,270	2,330	(940)	-28.7%
419091	Door Sales/News/Street Vendors/Related Workers	2,240	1,610	(630)	-28.1%
291060	Physicians/Surgeons	2,100	1,520	(580)	-27.6%
231011	Lawyers	2,750	2,220	(530)	-19.3%
412031	Retail Salespersons	3,000	2,510	(490)	-16.3%
533032	Truck Drivers/Heavy/Tractor-Trailer	3,810	3,320	(490)	-12.9%
472031	Carpenters	7,670	7,220	(450)	-5.9%
472111	Electricians	1,120	870	(250)	-22.3%
514121	Welders/Cutters/Solderers/Brazers	850	620	(230)	-27.1%
411011	First-Line Supervisors/Managers, Retail Sales Workers	13,540	13,330	(210)	-1.6%
493021	Automotive Body/Related Repairers	620	440	(180)	-29.0%
291020	Dentists	1,740	1,570	(170)	-9.8%
372011	Janitors/Cleaners Except Maids/Housekeeping Cleaners	1,740	1,580	(160)	-9.2%
512092	Team Assemblers	740	590	(150)	-20.3%
419041	Telemarketers	1,080	940	(140)	-13.0%
434171	Receptionists/Information Clerks	310	170	(140)	-45.2%
172141	Mechanical Engineers	250	130	(120)	-48.0%
373011	Landscaping/Groundskeeping Workers	1,590	1,470	(120)	-7.5%
499041	Industrial Machinery Mechanics	510	390	(120)	-23.5%
511011	F-L Supervisors/Managers, Production/Operating Workers	770	650	(120)	-15.6%
537062	Laborers/Freight/Stock/Material Movers/Hand	460	340	(120)	-26.1%
516041	Shoe/Leather Workers/Repairers	180	70	(110)	-61.1%
517011	Cabinetmakers/Bench Carpenters	480	370	(110)	-22.9%
533033	Truck Drivers/Light or Delivery Services	2,130	2,020	(110)	-5.2%
411012	First-Line Supervisors/Managers, Non-Retail Sales Workers	1,460	1,380	(80)	-5.5%
516011	Laundry/Dry-Cleaning Workers	330	250	(80)	-24.2%
119030	Education Administrators	840	770	(70)	-8.3%
412011	Cashiers	230	160	(70)	-30.4%
439022	Word Processors/Typists	200	130	(70)	-35.0%
515023	Printing Machine Operators	300	230	(70)	-23.3%

⁽¹⁾The occupational (Occ) codes are based on the Standard Occupational Classification (SOC) codes, except where noted.

Employment is rounded to the nearest ten.

Information derived using data from 2001 OES, 2000 ES-202 and 2000 CES (3/01 Benchmark). Unpublished data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau was also used.

Source: Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development

DETAILED EMPLOYMENT TRENDS FOR ALL OCCUPATIONS

Figure 2-11 provides a detailed listing of occupational trends for all 753 occupations. The table shows which one of the ten broad occupational groups a particular occupation falls under, gives the estimated employment change in each occupation between 2000 and 2010, and lists the projected number of average annual openings in each occupation. Also included for each occupation are the education and training typically required along with salary and wage information.

If you would like an electronic version of this table, it is available at <http://www.dwd.state.wi.us/lmi/projections.htm>.

ADDITIONAL RESOURCES IN THE APPENDICES

An alphabetical index of all 753 occupations is found in appendix 1. This appendix lists the page number of the detailed occupational trend for each occupation in figure 2-11. In addition, appendix 1 includes the complete occupational title for each occupation. Due to the length of many of the titles they are abbreviated in figures 2-4 through 2-11.

More information about Department of Workforce Development resources for job seekers, employees, and employers is included in appendix 2.

Appendix 3 describes the methodology used to develop the projections.

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**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
000000	TOTAL, ALL OCCUPATIONS	3,011,380	3,301,160	289,780	9.6%	28,980	72,270	101,250
110000	MANAGEMENT OCCUPATIONS	153,240	169,800	16,560	10.8%	1,660	2,800	4,460
111000	TOP EXECUTIVES	49,810	54,270	4,460	9.0%	450	1,010	1,460
111011	Chief Executives	6,510	7,180	670	10.3%	70	200	270
111021	General and Operations Managers	37,900	41,270	3,370	8.9%	340	640	980
111031	Legislators	5,390	5,830	440	8.2%	40	170	210
112000	AD/MRKT/PROM/PR & SALES MANAGERS	13,490	16,660	3,170	23.5%	320	200	520
112011	Advertising/Promotions Managers	2,130	2,650	520	24.4%	50	30	80
112020	Marketing and Sales Managers	9,620	11,760	2,140	22.2%	220	140	360
112021	Marketing Managers	3,290	3,980	690	21.0%	70	50	120
112022	Sales Managers	6,330	7,780	1,450	22.9%	150	90	240
112031	Public Relations Managers	1,740	2,250	510	29.3%	50	30	80
113000	OPERATIONS SPECIALTIES MANAGERS	37,710	41,470	3,760	10.0%	390	650	1,040
113011	Administrative Services Managers	5,580	6,220	640	11.5%	60	90	150
113021	Computer/Info Systems Managers	5,130	6,860	1,730	33.7%	170	90	260
113031	Financial Managers	10,450	11,670	1,220	11.7%	120	160	280
113040	Human Resources Managers	3,630	3,740	110	3.0%	10	60	70
113051	Industrial Production Managers	7,390	7,410	20	0.3%	0	120	120
113061	Purchasing Managers	2,900	2,600	(300)	-10.3%	0	90	90
113071	Transpo/Storage/Distrib Managers	2,630	2,970	340	12.9%	30	40	70
119000	OTHER MANAGEMENT OCCUPATIONS	52,220	57,400	5,180	9.9%	560	930	1,490
119011	Farm/Ranch/Other Ag Managers	110	130	20	18.2%	0	0	0
119021	Construction Managers	3,470	3,880	410	11.8%	40	60	100
119030	Education Administrators	10,400	11,620	1,220	11.7%	120	270	390
119041	Engineering Managers	5,010	4,680	(330)	-6.6%	0	80	80
119051	Food Service Managers	7,890	8,640	750	9.5%	80	90	170
119061	Funeral Directors	930	1,000	70	7.5%	10	20	30
119071	Gaming Managers	140	200	60	42.9%	10	0	10
119081	Lodging Managers	1,690	1,910	220	13.0%	20	20	40
119111	Medical/Health Services Managers	4,730	6,240	1,510	31.9%	150	80	230
119121	Natural Sciences Managers	770	760	(10)	-1.3%	0	10	10
119131	Postmasters/Mail Superintendents	630	660	30	4.8%	0	10	10
119141	Property/RE/Community Assoc Managers	2,790	3,180	390	14.0%	40	50	90
119151	Social/Community Service Managers	3,260	3,820	560	17.2%	60	60	120
119199	Managers, All Other	10,400	10,680	280	2.7%	30	180	210
130000	BUS/FINANCIAL OPERATIONS OCCS	87,950	98,200	10,250	11.7%	1,030	1,620	2,650
131000	BUSINESS OPERATIONS SPECIALISTS	48,920	53,870	4,950	10.1%	500	970	1,470
131011	Agents/Bus Mgrs Artsts/Prfrmrs/Athletes	180	210	30	16.7%	0	0	0
131020	Buyers and Purchasing Agents	8,700	8,710	10	0.1%	0	200	200
131021	Purch Agents/Buyers Farm Products	320	340	20	6.3%	0	10	10
131022	Wholesale/Retail Buyers Ex Farm	2,770	2,490	(280)	-10.1%	0	80	80
131023	Purch Agents Ex Whole/Retail/Farm	5,620	5,880	260	4.6%	30	110	140

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages**

Occ Code ⁽¹⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
000000	TOTAL, ALL OCCUPATIONS		32,160	8.96 - 19.14
110000	MANAGEMENT OCCUPATIONS		63,860	18.93 - 40.06
111000	TOP EXECUTIVES		NA	NA
111011	Chief Executives	Work experience & degree	105,790	36.73 - NA
111021	General and Operations Managers	Work experience & degree	72,180	20.66 - 46.39
111031	Legislators	Work experience & degree	19,080	5.89 - 8.55
112000	AD/MRKT/PROM/PR & SALES MANAGERS		NA	NA
112011	Advertising/Promotions Managers	Work experience & degree	51,970	15.27 - 32.32
112020	Marketing and Sales Managers		NA	NA
112021	Marketing Managers	Work experience & degree	72,040	23.83 - 43.23
112022	Sales Managers	Work experience & degree	69,510	21.85 - 42.89
112031	Public Relations Managers	Work experience & degree	51,960	16.23 - 31.24
113000	OPERATIONS SPECIALTIES MANAGERS		NA	NA
113011	Administrative Services Managers	Work experience & degree	54,120	16.36 - 34.07
113021	Computer/Info Systems Managers	Work experience & degree	72,820	27.26 - 42.70
113031	Financial Managers	Work experience & degree	65,790	21.65 - 40.14
113040	Human Resources Managers	Work experience & degree	57,600	20.13 - 34.38
113051	Industrial Production Managers	Bachelor's degree	63,050	22.95 - 36.87
113061	Purchasing Managers	Work experience & degree	55,160	17.83 - 34.10
113071	Transpo/Storage/Distrib Managers	Work experience in related occ	57,160	20.28 - 33.68
119000	OTHER MANAGEMENT OCCUPATIONS		NA	NA
119011	Farm/Ranch/Other Ag Managers	Work experience & degree	48,110	11.36 - 26.95
119021	Construction Managers	Bachelor's degree	63,410	22.13 - 36.07
119030	Education Administrators	Work experience & degree	NA	NA
119041	Engineering Managers	Work experience & degree	78,200	30.49 - 44.31
119051	Food Service Managers	Work experience in related occ	33,020	12.09 - 18.60
119061	Funeral Directors	Associate degree	56,930	18.56 - 34.56
119071	Gaming Managers	Work experience & degree	46,640	18.02 - 26.65
119081	Lodging Managers	Work experience in related occ	33,170	11.55 - 18.31
119111	Medical/Health Services Managers	Work experience & degree	60,590	21.69 - 34.23
119121	Natural Sciences Managers	Work experience & degree	72,100	27.14 - 41.71
119131	Postmasters/Mail Superintendents	Work experience in related occ	47,610	19.21 - 26.38
119141	Property/RE/Community Assoc Managers	Bachelor's degree	41,620	10.22 - 24.93
119151	Social/Community Service Managers	Bachelor's degree	41,370	14.82 - 24.26
119199	Managers, All Other	Work experience in related occ	64,550	23.57 - 38.49
130000	BUS/FINANCIAL OPERATIONS OCCS		44,900	15.16 - 26.33
131000	BUSINESS OPERATIONS SPECIALISTS		NA	NA
131011	Agents/Bus Mgrs Artsts/Prfrmrs/Athletes	Work experience & degree	40,250	13.28 - 26.29
131020	Buyers and Purchasing Agents		NA	NA
131021	Purch Agents/Buyers Farm Products	Work experience in related occ	39,670	14.36 - 22.12
131022	Wholesale/Retail Buyers Ex Farm	Bachelor's degree	39,760	13.06 - 23.50
131023	Purch Agents Ex Whole/Retail/Farm	Bachelor's degree	42,990	15.27 - 24.80

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
131030	Claims Adjust Appraise/Exam/Investrs	5,860	7,050	1,190	20.3%	120	70	190
131031	Claims Adjust/Exam/Investigators	5,640	6,790	1,150	20.4%	120	60	180
131032	Insurance Appraisers Auto Damage	220	260	40	18.2%	0	0	0
131041	Compl Officers Ex Ag/Cnst/Hlth/Sfty/Tr	2,980	3,270	290	9.7%	30	80	110
131051	Cost Estimators	4,270	4,690	420	9.8%	40	90	130
131061	Emergency Mgmt Specialists	490	550	60	12.2%	10	10	20
131070	HR/Training/Labor Relations Spec	9,320	9,770	450	4.8%	40	180	220
131071	Empl/Recruit/Placement Specialists	3,940	3,800	(140)	-3.6%	0	80	80
131072	Compensation/Benefits/Job Specialists	1,800	1,960	160	8.9%	20	30	50
131073	Training/Development Specialists	3,580	4,010	430	12.0%	40	70	110
131111	Management Analysts	5,770	6,990	1,220	21.1%	120	50	170
131121	Meeting and Convention Planners	850	1,040	190	22.4%	20	20	40
131199	Business Oper Specialists/All Other	10,500	11,610	1,110	10.6%	110	270	380
132000	FINANCIAL SPECIALISTS	39,030	44,320	5,290	13.6%	530	650	1,180
132011	Accountants and Auditors	18,090	20,660	2,570	14.2%	260	270	530
132021	Appraisers/Assessors Real Estate	1,410	1,640	230	16.3%	20	40	60
132031	Budget Analysts	1,030	1,080	50	4.9%	10	20	30
132041	Credit Analysts	1,150	1,260	110	9.6%	10	20	30
132050	Financial Analysts and Advisors	7,970	9,400	1,430	17.9%	140	110	250
132051	Financial Analysts	2,590	2,990	400	15.4%	40	40	80
132052	Personal Financial Advisors	2,370	3,090	720	30.4%	70	30	100
132053	Insurance Underwriters	3,010	3,310	300	10.0%	30	50	80
132061	Financial Examiners	480	510	30	6.3%	0	10	10
132070	Loan Counselors and Officers	6,170	6,590	420	6.8%	40	120	160
132071	Loan Counselors	420	480	60	14.3%	10	10	20
132072	Loan Officers	5,750	6,110	360	6.3%	40	110	150
132080	Tax Exam/Collectors/Revenue Agents	1,380	1,500	120	8.7%	10	30	40
132081	Tax Exam/Collectors/Revenue Agents	900	940	40	4.4%	0	20	20
132082	Tax Preparers	490	560	70	14.3%	10	10	20
132099	Financial Specialists/All Other	1,360	1,680	320	23.5%	30	30	60
150000	COMPUTER/MATHEMATICAL OCCS	46,710	66,850	20,140	43.1%	2,010	440	2,450
151000	COMPUTER SPECIALISTS	45,330	65,480	20,150	44.5%	2,020	410	2,430
151011	Computer/Info Scientists/Research	160	200	40	25.0%	0	0	0
151021	Computer Programmers	8,120	8,050	(70)	-0.9%	0	170	170
151030	Computer Software Engineers	5,450	9,080	3,630	66.6%	360	40	400
151031	Computer Software Engrns Apps	3,230	5,260	2,030	62.8%	200	20	220
151032	Computer Soft Engrns Systems Soft	2,220	3,820	1,600	72.1%	160	10	170
151041	Computer Support Specialists	8,420	14,430	6,010	71.4%	600	40	640
151051	Computer Systems Analysts	13,120	18,390	5,270	40.2%	530	120	650
151061	Database Administrators	1,600	2,330	730	45.6%	70	10	80
151071	Network/Computer Systems Admin	4,010	6,300	2,290	57.1%	230	20	250
151081	Network Systems/Data Comm Analysts	2,120	3,250	1,130	53.3%	110	10	120
151099	Computer Specialists/All Other	2,320	3,460	1,140	49.1%	110	20	130

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
131030	Claims Adjust Appraise/Exam/Investrs		NA	NA
131031	Claims Adjust/Exam/Investigators	Long-term on-the-job training	37,080	12.81 - 21.59
131032	Insurance Appraisers Auto Damage	Long-term on-the-job training	41,100	16.68 - 22.96
131041	Compl Officers Ex Ag/Cnst/Hlth/Sfty/Tr	Long-term on-the-job training	43,020	14.24 - 25.69
131051	Cost Estimators	Bachelor's degree	45,870	16.12 - 26.60
131061	Emergency Mgmt Specialists	Work experience in related occ	42,490	14.91 - 25.39
131070	HR/Training/Labor Relations Spec		NA	NA
131071	Empl/Recruit/Placement Specialists	Bachelor's degree	37,530	13.41 - 21.28
131072	Compensation/Benefits/Job Specialists	Bachelor's degree	38,370	14.80 - 21.52
131073	Training/Development Specialists	Bachelor's degree	39,250	13.17 - 23.49
131111	Management Analysts	Work experience & degree	57,600	19.94 - 32.87
131121	Meeting and Convention Planners	Bachelor's degree	35,150	12.48 - 20.65
131199	Business Oper Specialists/All Other	Bachelor's degree	42,630	13.36 - 27.14
132000	FINANCIAL SPECIALISTS		NA	NA
132011	Accountants and Auditors	Bachelor's degree	47,850	16.86 - 26.88
132021	Appraisers/Assessors Real Estate	Postsecondary vocational training	40,700	14.34 - 24.41
132031	Budget Analysts	Bachelor's degree	49,830	19.21 - 27.35
132041	Credit Analysts	Bachelor's degree	38,860	13.78 - 21.61
132050	Financial Analysts and Advisors		NA	NA
132051	Financial Analysts	Bachelor's degree	60,590	20.45 - 33.08
132052	Personal Financial Advisors	Bachelor's degree	58,900	15.77 - 35.52
132053	Insurance Underwriters	Bachelor's degree	40,410	14.48 - 23.23
132061	Financial Examiners	Bachelor's degree	56,010	18.19 - 32.94
132070	Loan Counselors and Officers		NA	NA
132071	Loan Counselors	Bachelor's degree	41,850	15.49 - 23.21
132072	Loan Officers	Bachelor's degree	47,740	15.33 - 27.98
132080	Tax Exam/Collectors/Revenue Agents		NA	NA
132081	Tax Exam/Collectors/Revenue Agents	Bachelor's degree	45,610	15.97 - 29.05
132082	Tax Preparers	Moderate-term on-the-job training	33,020	10.55 - 19.34
132099	Financial Specialists/All Other	Bachelor's degree	44,280	15.62 - 24.80
150000	COMPUTER/MATHEMATICAL OCCS		55,590	19.10 - 33.48
151000	COMPUTER SPECIALISTS		NA	NA
151011	Computer/Info Scientists/Research	Doctoral degree	65,200	22.61 - 36.96
151021	Computer Programmers	Bachelor's degree	53,740	20.19 - 30.79
151030	Computer Software Engineers		NA	NA
151031	Computer Software Engrns Apps	Bachelor's degree	62,790	24.28 - 35.12
151032	Computer Soft Engrns Systems Soft	Bachelor's degree	60,290	23.36 - 34.56
151041	Computer Support Specialists	Associate degree	39,840	14.71 - 22.69
151051	Computer Systems Analysts	Bachelor's degree	70,090	24.30 - 43.63
151061	Database Administrators	Bachelor's degree	50,550	17.55 - 30.16
151071	Network/Computer Systems Admin	Bachelor's degree	48,940	18.25 - 28.43
151081	Network Systems/Data Comm Analysts	Bachelor's degree	47,950	17.34 - 28.31
151099	Computer Specialists/All Other	Postsecondary vocational training	47,970	15.07 - 29.75

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
152000	MATHEMATICAL SCIENTISTS	1,380	1,370	(10)	-0.7%	0	30	30
152011	Actuaries	440	480	40	9.1%	0	10	10
152021	Mathematicians	40	50	10	25.0%	0	0	0
152031	Operations Research Analysts	610	550	(60)	-9.8%	0	20	20
152041	Statisticians	230	230	0	0.0%	0	0	0
152090	Misc Mathematical Scientists	70	70	0	0.0%	0	0	0
152091	Mathematical Techs	10	10	0	0.0%	0	0	0
152099	Math Science Occs/All Other	60	50	(10)	-16.7%	0	0	0
170000	ARCHITECTURE/ENGINEERING OCCS	50,520	51,880	1,360	2.7%	140	1,100	1,240
171000	ARCHITECTS/SURVEYORS/CARTOGRAPHERS	3,820	4,420	600	15.7%	60	50	110
171010	Architects, Except Naval	2,670	3,180	510	19.1%	50	20	70
171011	Architects/Ex Landscape/Naval	1,950	2,230	280	14.4%	30	10	40
171012	Landscape Architects	720	950	230	31.9%	20	0	20
171020	Surveys/Cartographers/Photogram	1,120	1,220	100	8.9%	10	30	40
171021	Cartographers/Photogrammetrists	260	310	50	19.2%	10	10	20
171022	Surveyors	870	910	40	4.6%	0	30	30
171099 ⁽²⁾	Architect/Surveyor/Cartographer AO	20	30	10	50.0%	0	0	0
172000	ENGINEERS	26,810	26,910	100	0.4%	10	570	580
172011	Aerospace Engineers	30	30	0	0.0%	0	0	0
172021	Agricultural Engineers	40	40	0	0.0%	0	0	0
172031	Biomedical Engineers	270	340	70	25.9%	10	10	20
172041	Chemical Engineers	420	420	0	0.0%	0	10	10
172051	Civil Engineers	3,440	3,600	160	4.7%	20	50	70
172061	Computer Hardware Engineers	810	910	100	12.3%	10	10	20
172070	Electrical and Electronics Engineers	4,420	4,520	100	2.3%	10	80	90
172071	Electrical Engineers	2,980	3,010	30	1.0%	0	50	50
172072	Electronics Engineers/Ex Computer	1,440	1,510	70	4.9%	10	30	40
172081	Environmental Engineers	960	1,230	270	28.1%	30	20	50
172110	Industrial Engineers	5,150	4,800	(350)	-6.8%	0	90	90
172111	Health/Safety Engineers/Ex Mining	570	640	70	12.3%	10	10	20
172112	Industrial Engineers	4,580	4,160	(420)	-9.2%	0	80	80
172121	Marine Engineers/Naval Architects	30	30	0	0.0%	0	0	0
172131	Materials Engineers	900	890	(10)	-1.1%	0	20	20
172141	Mechanical Engineers	7,680	7,700	20	0.3%	0	220	220
172151 ⁽⁸⁾	Mining/Geological Engineers	⁽⁸⁾	⁽⁸⁾	⁽⁸⁾	⁽⁸⁾	⁽⁸⁾	⁽⁸⁾	⁽⁸⁾
172161	Nuclear Engineers	130	130	0	0.0%	0	0	0
172171	Petroleum Engineers	20	20	0	0.0%	0	0	0
172199 ⁽⁸⁾	Engineers/All Other	2,510	2,270	(240)	-9.6%	0	50	50
173000	DRAFTERS/ENGINEERING/MAPPING TECHS	19,890	20,540	650	3.3%	70	490	560
173010	Drafters	6,950	7,200	250	3.6%	20	210	230
173011	Architectural/Civil Drafters	2,400	2,610	210	8.8%	20	70	90
173012	Electrical/Electronics Drafters	1,220	1,270	50	4.1%	10	40	50
173013	Mechanical Drafters	3,340	3,320	(20)	-0.6%	0	100	100

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
152000	MATHEMATICAL SCIENTISTS		NA	NA
152011	Actuaries	Work experience & degree	70,990	23.91 - 43.00
152021	Mathematicians	Master's degree	53,130	15.67 - 35.13
152031	Operations Research Analysts	Master's degree	59,520	21.15 - 36.12
152041	Statisticians	Master's degree	53,310	19.71 - 30.84
152090	Misc Mathematical Scientists		NA	NA
152091	Mathematical Techs	Associate degree	NA	NA
152099	Math Science Occs/All Other	Master's degree	57,820	22.15 - 33.51
170000	ARCHITECTURE/ENGINEERING OCCS		50,320	17.83 - 29.62
171000	ARCHITECTS/SURVEYORS/CARTOGRAPHERS		NA	NA
171010	Architects, Except Naval		NA	NA
171011	Architects/Ex Landscape/Naval	Bachelor's degree	56,580	19.03 - 31.99
171012	Landscape Architects	Bachelor's degree	42,390	14.87 - 24.02
171020	Surveyors/Cartographers/Photogram		NA	NA
171021	Cartographers/Photogrammetrists	Bachelor's degree	36,860	13.77 - 20.49
171022	Surveyors	Bachelor's degree	40,380	16.05 - 22.53
171099 ⁽²⁾	Architect/Surveyor/Cartographer AO	Bachelor's degree	42,720	17.24 - 21.97
172000	ENGINEERS		NA	NA
172011	Aerospace Engineers	Bachelor's degree	60,870	22.13 - 32.10
172021	Agricultural Engineers	Bachelor's degree	55,300	22.90 - 29.91
172031	Biomedical Engineers	Bachelor's degree	55,180	18.45 - 33.08
172041	Chemical Engineers	Bachelor's degree	67,520	26.31 - 39.16
172051	Civil Engineers	Bachelor's degree	53,930	20.87 - 30.86
172061	Computer Hardware Engineers	Bachelor's degree	59,820	20.87 - 36.09
172070	Electrical and Electronics Engineers		NA	NA
172071	Electrical Engineers	Bachelor's degree	63,300	24.02 - 35.13
172072	Electronics Engineers/Ex Computer	Bachelor's degree	59,120	22.38 - 34.82
172081	Environmental Engineers	Bachelor's degree	61,040	23.82 - 33.89
172110	Industrial Engineers		NA	NA
172111	Health/Safety Engineers/Ex Mining	Bachelor's degree	54,120	21.13 - 30.81
172112	Industrial Engineers	Bachelor's degree	57,850	22.52 - 33.06
172121	Marine Engineers/Naval Architects	Bachelor's degree	54,580	19.06 - 33.37
172131	Materials Engineers	Bachelor's degree	57,450	23.30 - 33.07
172141	Mechanical Engineers	Bachelor's degree	57,030	22.51 - 32.48
172151 ⁽⁸⁾	Mining/Geological Engineers	Bachelor's degree	61,590	24.44 - 33.97
172161	Nuclear Engineers	Bachelor's degree	77,710	30.54 - 42.70
172171	Petroleum Engineers	Bachelor's degree	NA	NA
172199 ⁽⁸⁾	Engineers/All Other	Bachelor's degree	61,490	22.79 - 35.80
173000	DRAFTERS/ENGINEERING/MAPPING TECHS		NA	NA
173010	Drafters		NA	NA
173011	Architectural/Civil Drafters	Postsecondary vocational training	38,280	14.64 - 20.89
173012	Electrical/Electronics Drafters	Postsecondary vocational training	42,450	15.81 - 24.31
173013	Mechanical Drafters	Postsecondary vocational training	37,970	14.86 - 21.21

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
173020	Engineering Technicians, Ex Drafters	10,730	10,710	(20)	-0.2%	0	220	220
173021	Aerospace Engineering/Opers Techs	50	50	0	0.0%	0	0	0
173022	Civil Engineering Technicians	1,890	1,880	(10)	-0.5%	0	40	40
173023	Electrical/Electronic Engineering Techs	3,850	3,740	(110)	-2.9%	0	80	80
173024	Electro-Mechanical Technicians	1,120	1,170	50	4.5%	10	20	30
173025	Environmental Engineering Technicians	320	410	90	28.1%	10	10	20
173026	Industrial Engineering Technicians	1,370	1,340	(30)	-2.2%	0	30	30
173027	Mechanical Engineering Technicians	1,990	1,990	0	0.0%	0	40	40
173029	Engineering Techs Ex Drafters AO	120	120	0	0.0%	0	0	0
173031	Surveying/Mapping Technicians	990	1,280	290	29.3%	30	30	60
173099 ⁽²⁾	Drafters/Engineering/Mapping Techs AO	1,220	1,360	140	11.5%	10	30	40
190000	LIFE/PHYSICAL/SOCIAL SCIENCE OCCS	28,970	32,370	3,400	11.7%	340	810	1,150
191000	LIFE SCIENTISTS	6,860	7,490	630	9.2%	60	210	270
191010	Agricultural and Food Scientists	1,250	1,330	80	6.4%	10	40	50
191020	Biological Scientists	1,330	1,520	190	14.3%	20	50	70
191021	Biochemists and Biophysicists	330	380	50	15.2%	10	10	20
191022	Microbiologists	630	740	110	17.5%	10	20	30
191023	Zoologists and Wildlife Biologists	380	400	20	5.3%	0	10	10
191030	Conservation Scientists & Foresters	1,260	1,340	80	6.3%	10	40	50
191031	Conservation Scientists	640	700	60	9.4%	10	20	30
191032	Foresters	620	650	30	4.8%	0	20	20
191040	Medical Scientists	2,210	2,420	210	9.5%	20	50	70
191041	Epidemiologists	80	100	20	25.0%	0	0	0
191042	Medical Scientists Ex Epidemiologists	2,130	2,320	190	8.9%	20	50	70
191099	Life Scientists/All Other	810	890	80	9.9%	10	30	40
192000	PHYSICAL SCIENTISTS	5,270	5,930	660	12.5%	70	170	240
192010	Astronomers and Physicists	380	430	50	13.2%	10	10	20
192011	Astronomers	30	30	0	0.0%	0	0	0
192012	Physicists	350	400	50	14.3%	10	10	20
192021	Atmospheric and Space Scientists	270	300	30	11.1%	0	10	10
192030	Chemists and Materials Scientists	2,470	2,700	230	9.3%	20	80	100
192031	Chemists	2,180	2,390	210	9.6%	20	70	90
192032	Materials Scientists	290	310	20	6.9%	0	10	10
192040	Environmental/Geoscientists	1,590	1,920	330	20.8%	30	50	80
192041	Environ Scien/Specialists/Incl Health	1,000	1,190	190	19.0%	20	30	50
192042	Geoscientists Ex Hydrolog/Geograph	160	190	30	18.8%	0	10	10
192043	Hydrologists	440	540	100	22.7%	10	10	20
192099	Physical Scientists/All Other	560	590	30	5.4%	0	20	20
193000	SOCIAL SCIENTISTS & RELATED WORKERS	10,380	11,900	1,520	14.6%	150	240	390
193011	Economists	450	520	70	15.6%	10	10	20
193020	Market and Survey Researchers	2,750	3,190	440	16.0%	50	60	110
193021	Market Research Analysts	2,490	2,870	380	15.3%	40	60	100
193022	Survey Researchers	250	320	70	28.0%	10	10	20

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
173020	Engineering Technicians, Ex Drafters		NA	NA
173021	Aerospace Engineering/Opers Techs	Associate degree	42,890	16.53 - 25.02
173022	Civil Engineering Technicians	Associate degree	39,210	15.41 - 22.18
173023	Electrical/Electronic Engineering Techs	Associate degree	41,670	15.69 - 24.14
173024	Electro-Mechanical Technicians	Associate degree	41,610	15.85 - 24.45
173025	Environmental Engineering Technicians	Associate degree	40,580	14.75 - 23.37
173026	Industrial Engineering Technicians	Associate degree	42,660	16.52 - 23.77
173027	Mechanical Engineering Technicians	Associate degree	42,680	15.68 - 23.55
173029	Engineering Techs Ex Drafters AO	Associate degree	NA	NA
173031	Surveying/Mapping Technicians	Moderate-term on-the-job training	30,010	11.99 - 16.74
173099 ⁽²⁾	Drafters/Engineering/Mapping Techs AO	Associate degree	39,430	15.33 - 22.48
190000	LIFE/PHYSICAL/SOCIAL SCIENCE OCCS		43,560	14.23 - 25.59
191000	LIFE SCIENTISTS		NA	NA
191010	Agricultural and Food Scientists	Bachelor's degree	NA	NA
191020	Biological Scientists		NA	NA
191021	Biochemists and Biophysicists	Doctoral degree	NA	NA
191022	Microbiologists	Doctoral degree	NA	NA
191023	Zoologists and Wildlife Biologists	Doctoral degree	41,760	15.70 - 23.41
191030	Conservation Scientists & Foresters		NA	NA
191031	Conservation Scientists	Bachelor's degree	45,940	18.58 - 25.56
191032	Foresters	Bachelor's degree	39,570	15.36 - 22.44
191040	Medical Scientists		NA	NA
191041	Epidemiologists	Doctoral degree	49,550	20.02 - 27.04
191042	Medical Scientists Ex Epidemiologists	Doctoral degree	NA	NA
191099	Life Scientists/All Other	Bachelor's degree	NA	NA
192000	PHYSICAL SCIENTISTS		NA	NA
192010	Astronomers and Physicists		NA	NA
192011	Astronomers	Doctoral degree	NA	NA
192012	Physicists	Doctoral degree	NA	NA
192021	Atmospheric and Space Scientists	Bachelor's degree	NA	NA
192030	Chemists and Materials Scientists		NA	NA
192031	Chemists	Bachelor's degree	46,550	15.87 - 27.16
192032	Materials Scientists	Bachelor's degree	54,670	21.45 - 31.52
192040	Environmental/Geoscientists		NA	NA
192041	Environ Scien/Specialists/Incl Health	Bachelor's degree	45,360	17.54 - 25.93
192042	Geoscientists Ex Hydrolog/Geograph	Bachelor's degree	46,750	16.26 - 27.02
192043	Hydrologists	Bachelor's degree	51,820	18.65 - 30.83
192099	Physical Scientists/All Other	Bachelor's degree	63,230	16.30 - 42.37
193000	SOCIAL SCIENTISTS & RELATED WORKERS		NA	NA
193011	Economists	Bachelor's degree	52,120	16.46 - 30.85
193020	Market and Survey Researchers		NA	NA
193021	Market Research Analysts	Bachelor's degree	49,420	16.78 - 28.31
193022	Survey Researchers	Bachelor's degree	31,840	8.56 - 19.34

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
193030	Psychologists	4,300	5,030	730	17.0%	70	100	170
193031	Clinical/Counseling/School Psych	4,280	5,000	720	16.8%	70	100	170
193032	Industrial-Organizational Psych	20	30	10	50.0%	0	0	0
193041	Sociologists	130	140	10	7.7%	0	0	0
193051	Urban and Regional Planners	460	520	60	13.0%	10	10	20
193090	Misc Social Science & Related Workers	2,290	2,500	210	9.2%	20	60	80
193091	Anthropologists/Archeologists	40	50	10	25.0%	0	0	0
193092	Geographers	40	40	0	0.0%	0	0	0
193093	Historians	90	110	20	22.2%	0	0	0
193094	Political Scientists	60	70	10	16.7%	0	0	0
193099	Social Scientists/Related Wrks AO	2,060	2,240	180	8.7%	20	50	70
194000	LIFE, PHYSICAL, AND SOCIAL SCIENCE TECHS	6,460	7,050	590	9.1%	60	190	250
194011	Agricultural and Food Science Techs	1,020	1,140	120	11.8%	10	20	30
194021	Biological Techs	1,090	1,190	100	9.2%	10	30	40
194031	Chemical Techs	1,470	1,650	180	12.2%	20	30	50
194041	Geological and Petroleum Techs	10	10	0	0.0%	0	0	0
194051 ⁽⁸⁾	Nuclear Techs	(8)	(8)	(8)	(8)	(8)	(8)	(8)
194090	Misc Life/Physical/Social Science Techs	2,830	3,010	180	6.4%	20	100	120
194091	Envir Sci/Protect Techs Incl Health	490	560	70	14.3%	10	20	30
194092	Forensic Science Techs	20	20	0	0.0%	0	0	0
194093	Forest/Conservation Techs	430	450	20	4.7%	0	20	20
194099 ⁽⁸⁾	Life/Physical/Social Science Techs AO	1,930	2,030	100	5.2%	10	70	80
210000	COMMUNITY/SOCIAL SERVICES OCCS	42,090	52,410	10,320	24.5%	1,030	730	1,760
211000	COUNS/SOC WORKERS/OTHER SOC SERVICE	28,020	35,480	7,460	26.6%	750	430	1,180
211010	Counselors	8,940	10,660	1,720	19.2%	170	180	350
211011	Sub Abuse/Behavioral Disorder Cnslrs	670	850	180	26.9%	20	10	30
211012	Educ/Vocational/School Counselors	4,230	5,080	850	20.1%	90	90	180
211013	Marriage/Family Therapists	660	850	190	28.8%	20	10	30
211014	Mental Health Counselors	730	880	150	20.5%	20	10	30
211015	Rehabilitation Counselors	2,660	3,010	350	13.2%	40	50	90
211020	Social Workers	9,260	11,420	2,160	23.3%	220	100	320
211021	Child/Family/School Social Workers	5,320	6,400	1,080	20.3%	110	60	170
211022	Medical/Public Health Social Workers	2,590	3,240	650	25.1%	70	30	100
211023	Mental Hlth/Sub Abuse Social Workers	1,350	1,780	430	31.9%	40	20	60
211090	Misc Community/Social Service Special	9,820	13,400	3,580	36.5%	360	150	510
211091	Health Educators	910	1,050	140	15.4%	10	10	20
211092	Prob Officers/Correctional Treat Special	2,080	2,280	200	9.6%	20	30	50
211093	Social/Human Service Assistants	6,830	10,070	3,240	47.4%	320	100	420
212000	RELIGIOUS WORKERS	9,160	11,080	1,920	21.0%	190	210	400
212011	Clergy	5,360	6,470	1,110	20.7%	110	150	260
212021	Directors/Religious Activities/Education	3,790	4,620	830	21.9%	80	60	140
219099 ⁽²⁾	Counsel/Social/Religious Workers AO	4,920	5,840	920	18.7%	90	90	180

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
193030	Psychologists		NA	NA
193031	Clinical/Counseling/School Psych	Master's degree	56,240	18.76 - 31.51
193032	Industrial-Organizational Psych	Master's degree	86,180	37.35 - 50.42
193041	Sociologists	Master's degree	NA	NA
193051	Urban and Regional Planners	Master's degree	46,430	17.18 - 27.46
193090	Misc Social Science & Related Workers		NA	NA
193091	Anthropologists/Archeologists	Master's degree	37,910	11.29 - 23.60
193092	Geographers	Master's degree	NA	NA
193093	Historians	Master's degree	38,100	12.24 - 23.86
193094	Political Scientists	Master's degree	NA	NA
193099	Social Scientists/Related Workers AO	Master's degree	NA	NA
194000	LIFE, PHYSICAL, AND SOCIAL SCIENCE TECHS		NA	NA
194011	Agricultural and Food Science Techs	Associate degree	30,650	10.19 - 18.05
194021	Biological Techs	Associate degree	29,900	11.20 - 16.74
194031	Chemical Techs	Associate degree	32,130	12.33 - 17.66
194041	Geological and Petroleum Techs	Associate degree	NA	NA
194051 ⁽⁸⁾	Nuclear Techs	Associate degree	58,530	24.40 - 32.69
194090	Misc Life/Physical/Social Science Techs		NA	NA
194091	Envir Sci/Protect Techs Incl Health	Associate degree	38,480	14.68 - 21.09
194092	Forensic Science Techs	Associate degree	36,220	13.89 - 20.63
194093	Forest/Conservation Techs	Associate degree	31,400	12.40 - 18.16
194099 ⁽⁸⁾	Life/Physical/Social Science Techs AO	Associate degree	32,850	11.32 - 18.75
210000	COMMUNITY/SOCIAL SERVICES OCCS		34,440	11.74 - 20.20
211000	COUNS/SOC WORKERS/OTHER SOC SERVICE		NA	NA
211010	Counselors		NA	NA
211011	Sub Abuse/Behavioral Disorder Cnslrs	Master's degree	43,720	14.29 - 24.41
211012	Educ/Vocational/School Counselors	Master's degree	43,500	15.81 - 25.74
211013	Marriage/Family Therapists	Master's degree	33,970	11.00 - 20.04
211014	Mental Health Counselors	Master's degree	49,220	14.92 - 28.86
211015	Rehabilitation Counselors	Master's degree	25,230	8.28 - 14.62
211020	Social Workers		NA	NA
211021	Child/Family/School Social Workers	Master's degree	36,320	13.33 - 20.83
211022	Medical/Public Health Social Workers	Master's degree	37,950	14.81 - 20.81
211023	Mental Hlth/Sub Abuse Social Workers	Master's degree	38,480	14.09 - 20.63
211090	Misc Community/Social Service Special		NA	NA
211091	Health Educators	Master's degree	34,070	11.28 - 21.00
211092	Prob Officers/Correctional Treat Special	Bachelor's degree	35,940	14.69 - 20.06
211093	Social/Human Service Assistants	Moderate-term on-the-job training	24,810	9.37 - 13.80
212000	RELIGIOUS WORKERS		NA	NA
212011	Clergy	Master's degree	40,850	15.42 - 22.43
212021	Directors/Religious Activities/Education	Bachelor's degree	NA	NA
219099 ⁽²⁾	Counsel/Social/Religious Workers AO	Bachelor's degree	34,630	12.53 - 20.53

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
230000	LEGAL OCCUPATIONS	15,790	17,990	2,200	13.9%	220	120	340
231000	LAWYERS, JUDGES, & RELATED WORKERS	10,550	11,890	1,340	12.7%	130	80	210
231011	Lawyers	10,060	11,360	1,300	12.9%	130	70	200
231020	Judges/Magistrates/Judicial Workers	490	520	30	6.1%	0	10	10
231021	Admin Law Jdgs/Adjudic/Hrng Officers	70	70	0	0.0%	0	0	0
231022	Arbitrators/Mediators/Conciliators	230	270	40	17.4%	0	10	10
231023	Judges/Magistrate Judges/Magistrates	190	190	0	0.0%	0	10	10
232000	LEGAL SUPPORT WORKERS	4,800	5,610	810	16.9%	80	40	120
232011	Paralegals and Legal Assistants	2,620	3,330	710	27.1%	70	20	90
232090	Miscellaneous Legal Support Workers	2,180	2,270	90	4.1%	10	20	30
232091	Court Reporters	260	270	10	3.8%	0	0	0
232092	Law Clerks	540	610	70	13.0%	10	10	20
232093	Title Examiners/Abstractors/Searchers	1,020	1,040	20	2.0%	0	10	10
232099	Legal Support Workers/All Other	370	350	(20)	-5.4%	0	0	0
239099 ⁽²⁾	Legal & Related Workers, All Other	430	500	70	16.3%	10	0	10
250000	EDUCATION/TRAINING/LIBRARY OCCS	177,460	203,850	26,390	14.9%	2,640	3,940	6,580
251000	POSTSECONDARY TEACHERS	28,320	33,890	5,570	19.7%	560	770	1,330
251011	Business Teachers Postsecondary	1,670	2,000	330	19.8%	30	50	80
251020	Math/Computer Teachers Postsecondary	1,370	1,640	270	19.7%	30	40	70
251021	Computer Science Teachers Postsec	550	660	110	20.0%	10	20	30
251022	Mathematical Science Teachers Ps	820	980	160	19.5%	20	20	40
251030	Engineering/Architecture Teach Postsec	760	910	150	19.7%	20	20	40
251031	Architecture Teachers Postsec	60	70	10	16.7%	0	0	0
251032	Engineering Teachers Postsec	700	840	140	20.0%	10	20	30
251040	Life Sciences Teachers Postsec	1,120	1,340	220	19.6%	20	30	50
251041	Ag Sciences Teachers Postsec	270	330	60	22.2%	10	10	20
251042	Biological Science Teachers Postsec	790	940	150	19.0%	20	20	40
251043	Forestry/Cons Sci Teachers Postsec	60	70	10	16.7%	0	0	0
251050	Physical Sciences Teachers Postsec	780	930	150	19.2%	20	20	40
251051	Atmos/Erth/Marin/Space Sci Tch Ps	130	160	30	23.1%	0	0	0
251052	Chemistry Teachers Postsec	330	400	70	21.2%	10	10	20
251053	Environmental Sci Teachers Postsec	50	60	10	20.0%	0	0	0
251054	Physics Teachers Postsec	260	310	50	19.2%	10	10	20
251060	Social Sciences Teachers Postsecondary	1,950	2,340	390	20.0%	40	50	90
251061	Anthropology/Archeology Teachers Ps	70	90	20	28.6%	0	0	0
251062	Area/Ethnic/Culture Studies Teach Ps	220	260	40	18.2%	0	10	10
251063	Economics Teachers Postsec	250	300	50	20.0%	10	10	20
251064	Geography Teachers Postsec	200	240	40	20.0%	0	10	10
251065	Political Science Teachers Postsec	290	340	50	17.2%	10	10	20
251066	Psychology Teachers Postsec	550	660	110	20.0%	10	20	30
251067	Sociology Teachers Postsec	360	430	70	19.4%	10	10	20
251070	Health Teachers Postsecondary	3,550	4,230	680	19.2%	70	100	170
251071	Health Specialties Teachers Postsec	2,830	3,390	560	19.8%	60	80	140
251072	Nursing Instructors/Teachers Postsec	710	840	130	18.3%	10	20	30

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
230000	LEGAL OCCUPATIONS		64,980	16.40 - 44.02
231000	LAWYERS, JUDGES, & RELATED WORKERS		NA	NA
231011	Lawyers	First professional degree	87,880	28.03 - 56.40
231020	Judges/Magistrates/Judicial Workers		NA	NA
231021	Admin Law Jdgs/Adjudic/Hrng Officers	Work experience & degree	56,750	17.93 - 34.86
231022	Arbitrators/Mediators/Conciliators	Work experience & degree	45,820	16.13 - 26.68
231023	Judges/Magistrate Judges/Magistrates	Work experience & degree	51,510	6.56 - 45.43
232000	LEGAL SUPPORT WORKERS		NA	NA
232011	Paralegals and Legal Assistants	Associate degree	35,050	13.13 - 19.63
232090	Miscellaneous Legal Support Workers		NA	NA
232091	Court Reporters	Postsecondary vocational training	40,780	15.20 - 23.19
232092	Law Clerks	Bachelor's degree	30,070	11.77 - 16.29
232093	Title Examiners/Abstractors/Searchers	Moderate-term on-the-job training	30,190	11.49 - 16.70
232099	Legal Support Workers/All Other	Bachelor's degree	NA	NA
239099 ⁽²⁾	Legal & Related Workers, All Other	Bachelor's degree	37,610	14.64 - 20.62
250000	EDUCATION/TRAINING/LIBRARY OCCS		37,760	11.28 - 23.56
251000	POSTSECONDARY TEACHERS		NA	NA
251011	Business Teachers Postsecondary	Doctoral degree	55,360	NA
251020	Math/Computer Teachers Postsecondary		NA	NA
251021	Computer Science Teachers Postsec	Doctoral degree	51,970	NA
251022	Mathematical Science Teachers Ps	Doctoral degree	48,250	NA
251030	Engineering/Architecture Teachers Postsec		NA	NA
251031	Architecture Teachers Postsec	Doctoral degree	52,340	NA
251032	Engineering Teachers Postsec	Doctoral degree	73,710	NA
251040	Life Sciences Teachers Postsec		NA	NA
251041	Ag Sciences Teachers Postsec	Doctoral degree	NA	NA
251042	Biological Science Teachers Postsec	Doctoral degree	62,210	NA
251043	Forestry/Cons Sci Teachers Postsec	Doctoral degree	NA	NA
251050	Physical Sciences Teachers Postsec		NA	NA
251051	Atmos/Erth/Marin/Space Sci Tch Ps	Doctoral degree	NA	NA
251052	Chemistry Teachers Postsec	Doctoral degree	55,100	NA
251053	Environmental Sci Teachers Postsec	Doctoral degree	59,360	NA
251054	Physics Teachers Postsec	Doctoral degree	59,670	NA
251060	Social Sciences Teachers Postsecondary		NA	NA
251061	Anthropology/Archeology Teachers Ps	Doctoral degree	49,910	NA
251062	Area/Ethnic/Culture Studies Teacher Ps	Doctoral degree	NA	NA
251063	Economics Teachers Postsec	Doctoral degree	62,160	NA
251064	Geography Teachers Postsec	Doctoral degree	50,550	NA
251065	Political Science Teachers Postsec	Doctoral degree	54,390	NA
251066	Psychology Teachers Postsec	Doctoral degree	46,720	NA
251067	Sociology Teachers Postsec	Doctoral degree	50,220	NA
251070	Health Teachers Postsecondary		NA	NA
251071	Health Specialties Teachers Postsec	Doctoral degree	NA	NA
251072	Nursing Instructors/Teachers Postsec	Master's degree	49,990	NA

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
251080	Ed/Library Science Teachers Postsec	1,510	1,810	300	19.9%	30	40	70
251081	Education Teachers Postsec	1,440	1,730	290	20.1%	30	40	70
251082	Library Science Teachers Postsec	70	80	10	14.3%	0	0	0
251110	Law/Crime Jus/Soc Work Teachers Ps	460	550	90	19.6%	10	10	20
251111	Crime Jus/Law Enforce Teachers Ps	140	160	20	14.3%	0	0	0
251112	Law Teachers Postsec	100	130	30	30.0%	0	0	0
251113	Social Work Teachers Postsec	220	270	50	22.7%	10	10	20
251120	Arts/Comm/Humanities Teachers Ps	4,720	5,650	930	19.7%	90	130	220
251121	Art/Drama/Music Teachers Postsec	1,520	1,820	300	19.7%	30	40	70
251122	Communications Teachers Postsec	800	950	150	18.8%	20	20	40
251123	English Language/Lit Teachers Ps	1,070	1,280	210	19.6%	20	30	50
251124	Foreign Language/Lit Teachers Ps	610	730	120	19.7%	10	20	30
251125	History Teachers Postsec	370	450	80	21.6%	10	10	20
251126	Philosophy/Religion Teachers Postsec	350	420	70	20.0%	10	10	20
251190	Miscellaneous Postsecondary Teachers	10,460	12,510	2,050	19.6%	210	290	500
251191	Graduate Teaching Assistants	2,900	3,470	570	19.7%	60	80	140
251192	Home Economics Teachers Postsec	100	120	20	20.0%	0	0	0
251193	Rec/Fitness Studies Teachers Postsec	280	340	60	21.4%	10	10	20
251194	Vocational Ed Teachers Postsec	2,680	3,200	520	19.4%	50	70	120
251199	Postsecondary Teachers All Other	4,490	5,380	890	19.8%	90	120	210
252000	PRIMARY/SECONDARY/SPECIAL ED TEACHERS	98,920	111,230	12,310	12.4%	1,230	2,220	3,450
252010	Preschool and Kindergarten Teachers	15,080	17,110	2,030	13.5%	200	190	390
252011	Preschool Teachers/Ex Special Ed	11,190	12,830	1,640	14.7%	160	140	300
252012	Kindergarten Teachers Ex Special Ed	3,890	4,290	400	10.3%	40	50	90
252020	Elementary and Middle School Teachers	45,580	49,300	3,720	8.2%	370	1,040	1,410
252021	Elementary School Tchrs Ex Special Ed	28,350	31,050	2,700	9.5%	270	640	910
252022	Middle School Teachers Ex Sp/Voc Ed	16,870	17,860	990	5.9%	100	380	480
252023	Vocational Ed Teachers Middle School	360	390	30	8.3%	0	10	10
252030	Secondary School Teachers	28,590	32,590	4,000	14.0%	400	870	1,270
252031	Secondary School Tchrs Ex Sp/Voc Ed	25,450	29,160	3,710	14.6%	370	770	1,140
252032	Voc Ed Teachers/Secondary School	3,140	3,430	290	9.2%	30	100	130
252040	Special Education Teachers	9,670	12,230	2,560	26.5%	260	120	380
252041	Spec Ed Tchrs/Presch/Kind/Elem Schl	5,170	6,820	1,650	31.9%	170	70	240
252042	Special Ed Teachers/Middle School	1,810	2,170	360	19.9%	40	20	60
252043	Special Ed Teachers/Sec School	2,690	3,240	550	20.4%	60	30	90
253000	OTHER TEACHERS AND INSTRUCTORS	12,920	15,350	2,430	18.8%	240	130	370
253011	Adult Literacy/Rem Ed/GED Tchrs/Inst	1,360	1,480	120	8.8%	10	10	20
253021	Self-Enrichment Education Teachers	4,440	5,220	780	17.6%	80	40	120
253090	Misc Teachers and Instructors	7,120	8,650	1,530	21.5%	150	70	220
253099	Teachers/Instructors/All Other	20	20	0	0.0%	0	0	0
253999 ⁽²⁾	Teachers Prim/Sec/Adult/All Other	7,100	8,630	1,530	21.5%	150	70	220
254000	LIBRARIANS, CURATORS, AND ARCHIVISTS	6,830	7,400	570	8.3%	60	210	270
254010	Archivists/Curators/Museum Technicians	280	360	80	28.6%	10	10	20
254021	Librarians	3,750	3,850	100	2.7%	10	80	90
254031	Library Technicians	2,800	3,190	390	13.9%	40	120	160

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
251080	Ed/Library Science Teachers Postsec		NA	NA
251081	Education Teachers Postsec	Doctoral degree	44,610	NA
251082	Library Science Teachers Postsec	Doctoral degree	51,230	NA
251110	Law/Crime Jus/Soc Work Teachers Ps		NA	NA
251111	Crime Jus/Law Enforce Teachers Ps	Doctoral degree	44,680	NA
251112	Law Teachers Postsec	Doctoral degree	NA	NA
251113	Social Work Teachers Postsec	Doctoral degree	47,580	NA
251120	Arts/Comm/Humanities Teachers Ps		NA	NA
251121	Art/Drama/Music Teachers Postsec	Doctoral degree	42,000	NA
251122	Communications Teachers Postsec	Doctoral degree	46,980	NA
251123	English Language/Lit Teachers Ps	Doctoral degree	43,210	NA
251124	Foreign Language/Lit Teachers Ps	Doctoral degree	46,040	NA
251125	History Teachers Postsec	Doctoral degree	49,610	NA
251126	Philosophy/Religion Teachers Postsec	Doctoral degree	50,640	NA
251190	Miscellaneous Postsecondary Teachers		NA	NA
251191	Graduate Teaching Assistants	Bachelor's degree	NA	NA
251192	Home Economics Teachers Postsec	Doctoral degree	47,110	NA
251193	Rec/Fitness Studies Teachers Postsec	Master's degree	42,350	NA
251194	Vocational Ed Teachers Postsec	Work experience in related occ	52,880	21.05 - 31.11
251199	Postsecondary Teachers All Other	Doctoral degree	45,600	NA
252000	PRIMARY/SECONDARY/SPECIAL ED TEACHERS		NA	NA
252010	Preschool and Kindergarten Teachers		NA	NA
252011	Preschool Teachers/Ex Special Ed	Bachelor's degree	19,630	7.55 - 10.24
252012	Kindergarten Teachers Ex Special Ed	Bachelor's degree	36,640	NA
252020	Elementary and Middle School Teachers		NA	NA
252021	Elementary School Tchrs Ex Special Ed	Bachelor's degree	41,850	NA
252022	Middle School Teachers Ex Sp/Voc Ed	Bachelor's degree	43,670	NA
252023	Vocational Ed Teachers Middle School	Bachelor's degree	46,430	NA
252030	Secondary School Teachers		NA	NA
252031	Secondary School Tchrs Ex Sp/Voc Ed	Bachelor's degree	42,210	NA
252032	Voc Ed Teachers/Secondary School	Bachelor's degree	43,600	NA
252040	Special Education Teachers		NA	NA
252041	Spec Ed Tchrs/Presch/Kind/Elem Schl	Bachelor's degree	41,560	NA
252042	Special Ed Teachers/Middle School	Bachelor's degree	39,240	NA
252043	Special Ed Teachers/Sec School	Bachelor's degree	42,800	NA
253000	OTHER TEACHERS AND INSTRUCTORS		NA	NA
253011	Adult Literacy/Rem Ed/GED Tchrs/Inst	Bachelor's degree	39,500	13.34 - 23.67
253021	Self-Enrichment Education Teachers	Work experience in related occ	27,020	9.37 - 15.42
253090	Misc Teachers and Instructors		NA	NA
253099	Teachers/Instructors/All Other	Bachelor's degree	NA	NA
253999 ⁽²⁾	Teachers Prim/Sec/Adult/All Other	Bachelor's degree	26,140	NA
254000	LIBRARIANS, CURATORS, AND ARCHIVISTS		NA	NA
254010	Archivists/Curators/Museum Technicians	Master's degree	33,480	11.07 - 20.27
254021	Librarians	Master's degree	44,300	17.44 - 25.67
254031	Library Technicians	Short-term on-the-job training	23,200	8.48 - 13.76

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
259000	OTHER EDUC, TRAINING, AND LIBRARY OCCS	30,470	35,980	5,510	18.1%	550	610	1,160
259011	Audio-Visual Collections Specialists	250	280	30	12.0%	0	0	0
259021	Farm/Home Management Advisors	200	230	30	15.0%	0	0	0
259031	Instructional Coordinators	1,440	1,700	260	18.1%	30	20	50
259041	Teacher Assistants	26,090	31,040	4,950	19.0%	500	550	1,050
259090	Misc Educ, Training, and Library Workers	2,500	2,750	250	10.0%	30	40	70
259099	Educ/Training/Library Workers/AO	0	0	0	0.0%	0	0	0
259199 ⁽²⁾	Libr/Mus/Trng/Other Ed Wrkrs/AO	2,500	2,750	250	10.0%	30	40	70
270000	ARTS/DESIGN/ENTER/SPORTS/MEDIA	47,490	54,340	6,850	14.4%	690	870	1,560
271000	ART AND DESIGN WORKERS	14,690	16,370	1,680	11.4%	170	180	350
271010	Artists and Related Workers	2,430	2,600	170	7.0%	20	50	70
271011	Art Directors	820	890	70	8.5%	10	20	30
271013	Fine Artists/Inc Painters/Sculptrs/Ilstrs	370	400	30	8.1%	0	10	10
271014	Multi-Media Artists/Animators	1,180	1,260	80	6.8%	10	20	30
271019	Artists/Related Workers/All Other	60	60	0	0.0%	0	0	0
271020	Designers	11,150	12,430	1,280	11.5%	130	110	240
271021	Commercial/Industrial Designers	1,450	1,640	190	13.1%	20	10	30
271022	Fashion Designers	60	60	0	0.0%	0	0	0
271023	Floral Designers	1,650	1,800	150	9.1%	20	20	40
271024	Graphic Designers	5,320	6,040	720	13.5%	70	50	120
271025	Interior Designers	1,450	1,600	150	10.3%	20	10	30
271026	Merchandise Display/Window Trimmers	1,120	1,160	40	3.6%	0	10	10
271027	Set/Exhibit Designers	100	130	30	30.0%	0	0	0
271099 ⁽²⁾	Art & Design Wrkrs, All Other	1,120	1,340	220	19.6%	20	20	40
272000	ENTER/PERFORM/SPORTS/RELATED WRKRS	13,230	15,830	2,600	19.7%	260	260	520
272010	Actors, Producers, and Directors	1,590	1,910	320	20.1%	30	30	60
272011	Actors	480	610	130	27.1%	10	10	20
272012	Producers/Directors	1,110	1,300	190	17.1%	20	20	40
272020	Athletes/Coaches/Umpires/Related Workers	5,210	5,900	690	13.2%	70	100	170
272021	Athletes/Sports Competitors	130	180	50	38.5%	10	0	10
272022	Coaches/Scouts	2,870	3,290	420	14.6%	40	60	100
272023	Umpires/Refs/Other Sports Officials	2,210	2,420	210	9.5%	20	40	60
272030	Dancers and Choreographers	1,100	1,130	30	2.7%	0	20	20
272031	Dancers	560	530	(30)	-5.4%	0	10	10
272032	Choreographers	540	600	60	11.1%	10	10	20
272040	Musicians/Singers/Related Wrkrs	5,190	6,690	1,500	28.9%	150	100	250
272041	Music Directors/Composers	1,390	1,700	310	22.3%	30	30	60
272042	Musicians/Singers	3,800	4,990	1,190	31.3%	120	70	190
272099	Entertain/Perform/Sports/Rel Work, AO	150	200	50	33.3%	10	0	10
273000	MEDIA AND COMMUNICATION WORKERS	15,680	17,800	2,120	13.5%	210	340	550
273010	Announcers	2,070	1,900	(170)	-8.2%	0	30	30
273020	News Analysts/Reporters/Correspondents	1,520	1,460	(60)	-3.9%	0	50	50
273031	Public Relations Specialists	5,210	6,600	1,390	26.7%	140	90	230

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
259000	OTHER EDUC, TRAINING, AND LIBRARY OCCS		NA	NA
259011	Audio-Visual Collections Specialists	Moderate-term on-the-job training	26,450	6.22 - 17.35
259021	Farm/Home Management Advisors	Bachelor's degree	48,800	11.90 - 26.69
259031	Instructional Coordinators	Master's degree	46,700	15.31 - 29.16
259041	Teacher Assistants	Associate degree	19,890	NA
259090	Misc Educ, Training, and Library Workers		NA	NA
259099	Educ/Training/Library Workers/AO	Bachelor's degree	NA	NA
259199 ⁽²⁾	Libr/Mus/Trng/Other Ed Wrks/AO	Bachelor's degree	33,340	12.04 - 19.23
270000	ARTS/DESIGN/ENTER/SPORTS/MEDIA		34,300	9.54 - 20.73
271000	ART AND DESIGN WORKERS		NA	NA
271010	Artists and Related Workers		NA	NA
271011	Art Directors	Work experience & degree	54,790	17.62 - 33.63
271013	Fine Artists/Inc Painters/Sculptrs/Ilstrs	Long-term on-the-job training	33,300	11.18 - 19.79
271014	Multi-Media Artists/Animators	Bachelor's degree	39,830	14.38 - 23.93
271019	Artists/Related Workers/All Other	Bachelor's degree	NA	NA
271020	Designers		NA	NA
271021	Commercial/Industrial Designers	Bachelor's degree	48,470	17.59 - 28.63
271022	Fashion Designers	Bachelor's degree	43,500	12.24 - 22.42
271023	Floral Designers	Moderate-term on-the-job training	19,130	7.32 - 10.68
271024	Graphic Designers	Bachelor's degree	36,710	12.97 - 21.54
271025	Interior Designers	Bachelor's degree	34,910	11.25 - 19.92
271026	Merchandise Display/Window Trimmers	Moderate-term on-the-job training	22,810	8.38 - 12.39
271027	Set/Exhibit Designers	Bachelor's degree	25,610	9.11 - 15.48
271099 ⁽²⁾	Art & Design Wrks, All Other	Bachelor's degree	30,740	10.27 - 18.01
272000	ENTER/PERFORM/SPORTS/RELATED WRKRS		NA	NA
272010	Actors, Producers, and Directors		NA	NA
272011	Actors	Long-term on-the-job training	NA	NA
272012	Producers/Directors	Work experience & degree	39,600	NA
272020	Athletes/Coaches/Umpires/Related Workers		NA	NA
272021	Athletes/Sports Competitors	Long-term on-the-job training	NA	NA
272022	Coaches/Scouts	Long-term on-the-job training	28,850	NA
272023	Umpires/Refs/Other Sports Officials	Long-term on-the-job training	NA	NA
272030	Dancers and Choreographers		NA	NA
272031	Dancers	Long-term on-the-job training	NA	NA
272032	Choreographers	Work experience in related occ	41,310	11.17 - 22.43
272040	Musicians/Singers/Related Wrks		NA	NA
272041	Music Directors/Composers	Work experience & degree	32,480	NA
272042	Musicians/Singers	Long-term on-the-job training	59,360	NA
272099	Entertain/Perform/Sports/Rel Work, AO	Long-term on-the-job training	20,380	NA
273000	MEDIA AND COMMUNICATION WORKERS		NA	NA
273010	Announcers	Long-term on-the-job training	26,020	7.83 - 14.54
273020	News Analysts/Reporters/Correspondents	Bachelor's degree	30,890	9.47 - 16.46
273031	Public Relations Specialists	Bachelor's degree	34,080	7.02 - 21.30

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
273040	Writers and Editors	5,920	6,740	820	13.9%	80	150	230
273041	Editors	2,620	3,040	420	16.0%	40	80	120
273042	Technical Writers	930	1,030	100	10.8%	10	30	40
273043	Writers/Authors	2,380	2,670	290	12.2%	30	40	70
273090	Misc Media and Communication Workers	960	1,110	150	15.6%	20	20	40
273091	Interpreters/Translators	380	430	50	13.2%	10	10	20
273099	Media/Communication Workers/AO	580	670	90	15.5%	10	10	20
274000	MEDIA/COMMUNICATION EQUIP WORKERS	3,890	4,340	450	11.6%	50	90	140
274010	Broadcast/Sound Eng Tech/Radio Ops	1,270	1,370	100	7.9%	10	40	50
274011	Audio/Video Equipment Technicians	460	490	30	6.5%	0	10	10
274012	Broadcast Technicians	670	700	30	4.5%	0	20	20
274014	Sound Engineering Technicians	140	170	30	21.4%	0	0	0
274021	Photographers	1,990	2,260	270	13.6%	30	40	70
274030	TV/Video/Motion Picture Camera Ops/Eds	520	590	70	13.5%	10	10	20
274031	Camera Oprs/TV/Video/Motion Pictures	290	310	20	6.9%	0	10	10
274032	Film/Video Editors	230	280	50	21.7%	10	0	10
274099	Media/Commun Equipment Wrkrs/AO	110	120	10	9.1%	0	0	0
290000	HEALTHCARE PRACTITIONERS & TECH	135,900	165,500	29,600	21.8%	2,960	2,890	5,850
291000	HEALTH DIAGNOSING/TREATING PRACTITIONER	85,280	103,070	17,790	20.9%	1,780	1,750	3,530
291011	Chiropractors	1,650	2,080	430	26.1%	40	30	70
291020	Dentists	4,280	4,350	70	1.6%	10	100	110
291031	Dietitians/Nutritionists	1,060	1,150	90	8.5%	10	30	40
291041	Optometrists	670	760	90	13.4%	10	10	20
291051	Pharmacists	4,070	4,650	580	14.3%	60	120	180
291060	Physicians and Surgeons	13,250	15,260	2,010	15.2%	200	200	400
291071	Physician Assistants	860	1,300	440	51.2%	40	20	60
291081	Podiatrists	40	50	10	25.0%	0	0	0
291111	Registered Nurses	46,530	57,200	10,670	22.9%	1,070	940	2,010
291120	Therapists	10,500	13,330	2,830	27.0%	280	260	540
291121	Audiologists	270	360	90	33.3%	10	10	20
291122	Occupational Therapists	2,400	3,000	600	25.0%	60	60	120
291123	Physical Therapists	2,880	3,640	760	26.4%	80	70	150
291124	Radiation Therapists	380	440	60	15.8%	10	10	20
291125	Recreational Therapists	850	880	30	3.5%	0	20	20
291126	Respiratory Therapists	1,450	1,950	500	34.5%	50	40	90
291127	Speech-Language Pathologists	2,270	3,060	790	34.8%	80	60	140
291131	Veterinarians	1,490	1,900	410	27.5%	40	30	70
291199	Health Diagnosing/Treating Pract AO	900	1,030	130	14.4%	10	20	30
292000	HEALTH TECHNOLOGISTS AND TECHNICIANS	47,110	58,250	11,140	23.6%	1,110	1,110	2,220
292010	Clinical Lab Technologists & Technicians	5,870	7,030	1,160	19.8%	120	140	260
292011	Medical/Clinical Lab Technologists	3,350	3,980	630	18.8%	60	80	140
292012	Medical/Clinical Lab Technicians	2,520	3,050	530	21.0%	50	60	110
292021	Dental Hygienists	3,000	3,980	980	32.7%	100	40	140

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
273040	Writers and Editors		NA	NA
273041	Editors	Bachelor's degree	41,650	13.43 - 23.37
273042	Technical Writers	Bachelor's degree	51,270	18.13 - 27.11
273043	Writers/Authors	Bachelor's degree	35,390	8.55 - 21.35
273090	Misc Media and Communication Workers		NA	NA
273091	Interpreters/Translators	Long-term on-the-job training	31,720	11.87 - 16.97
273099	Media/Communication Workers/AO	Long-term on-the-job training	38,430	12.21 - 24.25
274000	MEDIA/COMMUNICATION EQUIP WORKERS		NA	NA
274010	Broadcast/Sound Eng Tech/Radio Ops		NA	NA
274011	Audio/Video Equipment Technicians	Long-term on-the-job training	29,550	8.07 - 17.66
274012	Broadcast Technicians	Postsecondary vocational training	29,910	9.65 - 19.16
274014	Sound Engineering Technicians	Postsecondary vocational training	53,180	23.05 - 31.10
274021	Photographers	Bachelor's degree	27,530	9.60 - 16.26
274030	TV/Video/Motion Picture Camera Ops/Eds		NA	NA
274031	Camera Ops/TV/Video/Motion Pictures	Moderate-term on-the-job training	30,520	7.03 - 23.63
274032	Film/Video Editors	Bachelor's degree	37,250	12.80 - 20.15
274099	Media/Commun Equipment Wrkrs/AO	Moderate-term on-the-job training	34,810	10.71 - 21.45
290000	HEALTHCARE PRACTITIONERS & TECH		48,250	15.18 - 26.09
291000	HEALTH DIAGNOSING/TREATING PRACTITIONER		NA	NA
291011	Chiropractors	First professional degree	65,550	22.69 - 35.73
291020	Dentists	First professional degree	79,130	15.39 - 68.99
291031	Dietitians/Nutritionists	Bachelor's degree	39,660	15.73 - 22.79
291041	Optometrists	First professional degree	84,420	28.30 - 54.18
291051	Pharmacists	First professional degree	78,510	34.74 - 42.60
291060	Physicians and Surgeons	First professional degree	NA	NA
291071	Physician Assistants	Bachelor's degree	70,950	26.36 - 41.89
291081	Podiatrists	First professional degree	109,140	47.51 - 69.37
291111	Registered Nurses	Associate or Bachelor's degree	46,750	19.06 - 25.63
291120	Therapists		NA	NA
291121	Audiologists	Master's degree	45,990	19.00 - 25.76
291122	Occupational Therapists	Bachelor's degree	47,350	18.86 - 26.45
291123	Physical Therapists	Master's degree	56,800	23.49 - 31.67
291124	Radiation Therapists	Associate degree	49,380	19.97 - 26.87
291125	Recreational Therapists	Bachelor's degree	28,620	10.23 - 16.36
291126	Respiratory Therapists	Associate degree	39,420	16.59 - 21.23
291127	Speech-Language Pathologists	Master's degree	48,040	19.29 - 26.71
291131	Veterinarians	First professional degree	63,590	21.64 - 34.77
291199	Health Diagnosing/Treating Pract AO	First professional degree	62,330	20.06 - 33.98
292000	HEALTH TECHNOLOGISTS AND TECHNICIANS		NA	NA
292010	Clinical Lab Technologists & Technicians		NA	NA
292011	Medical/Clinical Lab Technologists	Bachelor's degree	42,700	18.25 - 22.93
292012	Medical/Clinical Lab Technicians	Associate degree	30,680	12.40 - 16.81
292021	Dental Hygienists	Associate degree	49,270	22.58 - 26.36

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
292030	Diagnostic Related Technlgst/Techncns	5,500	6,880	1,380	25.1%	140	120	260
292031	Cardiovascular Technlgst/Techncns	700	950	250	35.7%	30	20	50
292032	Diagnostic Medical Sonographers	780	990	210	26.9%	20	20	40
292033	Nuclear Medicine Technologists	320	380	60	18.8%	10	10	20
292034	Radiologic Technologists/Technicians	3,710	4,560	850	22.9%	90	80	170
292041	Emergency Medical Techs/Paramedics	6,050	7,550	1,500	24.8%	150	150	300
292050	Health Diagnos/Treat Support Technicians	8,970	11,290	2,320	25.9%	230	230	460
292051	Dietetic Technicians	410	510	100	24.4%	10	10	20
292052	Pharmacy Technicians s	4,140	5,370	1,230	29.7%	120	110	230
292053	Psychiatric Technicians	1,140	1,030	(110)	-9.6%	0	30	30
292054	Respiratory Therapy Technicians	550	740	190	34.5%	20	10	30
292055	Surgical Technologists	1,650	2,180	530	32.1%	50	40	90
292056	Veterinary Technologists/ Technicians	1,090	1,450	360	33.0%	40	30	70
292061	Licensed Practical/Vocational Nurses	11,750	13,280	1,530	13.0%	150	300	450
292071	Medical Records/Health Info Technicians	3,290	5,050	1,760	53.5%	180	70	250
292081	Opticians, Dispensing	2,590	3,070	480	18.5%	50	50	100
292091	Orthotists/Prosthetists	100	110	10	10.0%	0	0	0
299000	OTHER HEALTHCARE PRACT/TECHNCL OCCS	3,510	4,180	670	19.1%	70	30	100
299010	Occupational Health/Safety Spec/Techs	530	610	80	15.1%	10	10	20
299090	Misc Health Practitioners/Technical Wrks	2,980	3,580	600	20.1%	60	10	70
299091	Athletic Trainers	310	350	40	12.9%	0	10	10
299099	Healthcare Practitioners/Tech Wkr/AO	2,680	3,220	540	20.1%	50	0	50
310000	HEALTHCARE SUPPORT OCCUPATIONS	78,890	98,940	20,050	25.4%	2,010	1,310	3,320
311010	Nursing/Psychiatric/Home Health Aides	53,950	65,760	11,810	21.9%	1,180	690	1,870
311011	Home Health Aides	11,990	16,230	4,240	35.4%	420	150	570
311012	Nursing Aides/Orderlies/Attendants	40,300	47,590	7,290	18.1%	730	510	1,240
311013	Psychiatric Aides	1,660	1,940	280	16.9%	30	20	50
312000	OCC/PHYSICAL THERAPIST ASSISTANTS/AIDES	2,670	3,710	1,040	39.0%	100	80	180
312010	Occupational Therapist Assistants/Aides	820	1,120	300	36.6%	30	20	50
312011	Occupational Therapist Assistants	600	820	220	36.7%	20	20	40
312012	Occupational Therapist Aides	220	300	80	36.4%	10	10	20
312020	Physical Therapist Assistants/Aides	1,850	2,590	740	40.0%	70	50	120
312021	Physical Therapist Assistants	1,190	1,650	460	38.7%	50	30	80
312022	Physical Therapist Aides	670	940	270	40.3%	30	20	50
319000	OTHER HEALTHCARE SUPPORT OCCUPATIONS	22,270	29,470	7,200	32.3%	720	540	1,260
319011	Massage Therapists	710	930	220	31.0%	20	20	40
319090	Misc Healthcare Support Occupations	21,560	28,540	6,980	32.4%	700	520	1,220
319091	Dental Assistants	5,780	7,740	1,960	33.9%	200	100	300
319092	Medical Assistants	6,310	9,570	3,260	51.7%	330	170	500
319093	Medical Equipment Preparers	570	650	80	14.0%	10	20	30
319094	Medical Transcriptionists	2,890	3,570	680	23.5%	70	80	150
319095	Pharmacy Aides	1,280	1,400	120	9.4%	10	30	40
319096	Vet Assts/Lab Animal Caretakers	680	910	230	33.8%	20	20	40
319099	Healthcare Support Workers, All Other	4,050	4,700	650	16.0%	70	110	180

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
292030	Diagnostic Related Technlgst/Techncns		NA	NA
292031	Cardiovascular Technlgst/Techncns	Associate degree	34,790	12.02 - 20.51
292032	Diagnostic Medical Sonographers	Associate degree	52,770	20.23 - 30.77
292033	Nuclear Medicine Technologists	Associate degree	48,650	20.12 - 26.84
292034	Radiologic Technologists/Technicians	Associate degree	37,120	15.08 - 20.38
292041	Emergency Medical Techs/Paramedics	Postsecondary vocational training	22,870	7.43 - 12.84
292050	Health Diagnos/Treat Support Technicians		NA	NA
292051	Dietetic Technicians	Moderate-term on-the-job training	23,180	8.53 - 13.46
292052	Pharmacy Technicians s	Moderate-term on-the-job training	21,860	8.77 - 11.99
292053	Psychiatric Technicians	Postsecondary vocational training	28,910	10.65 - 16.59
292054	Respiratory Therapy Technicians	Postsecondary vocational training	35,470	14.79 - 19.45
292055	Surgical Technologists	Postsecondary vocational training	32,900	13.34 - 17.85
292056	Veterinary Technologists/ Technicians	Associate degree	23,020	9.35 - 12.79
292061	Licensed Practical/Vocational Nurses	Postsecondary vocational training	32,420	13.39 - 17.47
292071	Medical Records/Health Info Technicians	Associate degree	24,060	9.15 - 13.20
292081	Opticians, Dispensing	Long-term on-the-job training	26,710	9.68 - 15.13
292091	Orthotists/Prosthetists	Bachelor's degree	42,970	14.03 - 25.70
299000	OTHER HEALTHCARE PRACT/TECHNCL OCCS		NA	NA
299010	Occupational Health/Safety Spec/Techs	Bachelor's degree	40,920	11.77 - 25.58
299090	Misc Health Practitioners/Technical Wrks		NA	NA
299091	Athletic Trainers	Bachelor's degree	34,930	NA
299099	Healthcare Practitioners/Tech Wkr/AO	Associate degree	NA	NA
310000	HEALTHCARE SUPPORT OCCUPATIONS		21,940	8.72 - 11.97
311010	Nursing/Psychiatric/Home Health Aides		NA	NA
311011	Home Health Aides	Short-term on-the-job training	19,010	7.97 - 10.23
311012	Nursing Aides/Orderlies/Attendants	Short-term on-the-job training	20,730	8.57 - 11.14
311013	Psychiatric Aides	Short-term on-the-job training	21,100	8.27 - 12.09
312000	OCC/PHYSICAL THERAPIST ASSISTANTS/AIDES		NA	NA
312010	Occupational Therapist Assistants/Aides		NA	NA
312011	Occupational Therapist Assistants	Associate degree	32,780	13.69 - 17.58
312012	Occupational Therapist Aides	Short-term on-the-job training	23,830	9.45 - 13.23
312020	Physical Therapist Assistants/Aides		NA	NA
312021	Physical Therapist Assistants	Associate degree	33,100	13.78 - 18.41
312022	Physical Therapist Aides	Short-term on-the-job training	21,420	8.80 - 11.58
319000	OTHER HEALTHCARE SUPPORT OCCUPATIONS		NA	NA
319011	Massage Therapists	Postsecondary vocational training	35,980	10.03 - 24.44
319090	Misc Healthcare Support Occupations		NA	NA
319091	Dental Assistants	Moderate-term on-the-job training	24,150	9.75 - 13.24
319092	Medical Assistants	Moderate-term on-the-job training	25,050	10.26 - 13.38
319093	Medical Equipment Preparers	Short-term on-the-job training	22,100	8.90 - 12.19
319094	Medical Transcriptionists	Postsecondary vocational training	27,290	11.27 - 14.96
319095	Pharmacy Aides	Short-term on-the-job training	20,720	8.20 - 11.35
319096	Vet Assts/Lab Animal Caretakers	Short-term on-the-job training	17,950	7.23 - 9.83
319099	Healthcare Support Workers, All Other	Short-term on-the-job training	23,850	9.46 - 12.99

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
330000	PROTECTIVE SERVICE OCCUPATIONS	49,660	58,020	8,360	16.8%	840	1,340	2,180
331000	FIRST-LINE SUP/MGRS PROTECT SERV WRKRS	4,570	4,990	420	9.2%	40	130	170
331010	First-Line Sup/Mgrs of Law Enforce Wrks	2,660	2,950	290	10.9%	30	70	100
331011	First-Line Sup/Mgr of Correct Officers	640	770	130	20.3%	10	10	20
331012	First-Line Sup/Mgr of Police/Detectives	2,020	2,180	160	7.9%	20	50	70
331021	F-L Sup/Mgr Fire Fight/Prevent Wrks	1,260	1,290	30	2.4%	0	40	40
331099	F-L Sups/Mgrs/Protect Service Wrks/AO	650	750	100	15.4%	10	20	30
332000	FIRE FIGHTING AND PREVENTION WORKERS	7,720	8,040	320	4.1%	30	200	230
332011	Fire Fighters	7,390	7,680	290	3.9%	30	190	220
332020	Fire Inspectors	330	360	30	9.1%	0	10	10
333000	LAW ENFORCEMENT WORKERS	22,280	26,290	4,010	18.0%	400	490	890
333010	Bailiffs/Correctional Officers/Jailers	7,420	8,910	1,490	20.1%	150	180	330
333011	Bailiffs	230	250	20	8.7%	0	10	10
333012	Correctional Officers/Jailers	7,190	8,660	1,470	20.4%	150	170	320
333021	Detectives/Criminal Investigators	1,780	1,940	160	9.0%	20	40	60
333031	Fish/Game Wardens	210	200	(10)	-4.8%	0	0	0
333041	Parking Enforcement Workers	230	250	20	8.7%	0	0	0
333050	Police Officers	12,640	14,990	2,350	18.6%	230	270	500
333051	Police/Sheriff's Patrol Officers	12,600	14,960	2,360	18.7%	240	270	510
333052	Transit/Railroad Police	40	30	(10)	-25.0%	0	0	0
339000	OTHER PROTECTIVE SERVICE WORKERS	15,100	18,710	3,610	23.9%	360	530	890
339011	Animal Control Workers	240	270	30	12.5%	0	20	20
339021	Private Detectives/Investigators	530	590	60	11.3%	10	10	20
339030	Security Guards/Gaming Surv Officers	10,470	13,600	3,130	29.9%	310	290	600
339090	Miscellaneous Protective Service Workers	3,870	4,250	380	9.8%	40	210	250
339091	Crossing Guards	2,060	2,140	80	3.9%	10	70	80
339092	Lifgrds/Ski/Oth Rec Prot Service Wrks	30	40	10	33.3%	0	0	0
339099	Protective Service Workers/All Other	1,770	2,080	310	17.5%	30	140	170
350000	FOOD PREPARATION/SERVING OCCS	218,820	244,850	26,030	11.9%	2,600	9,840	12,440
351010	First-Line Sups/Mgrs Food Prep/Srv Wkr	16,420	17,940	1,520	9.3%	150	430	580
351011	Chefs/Head Cooks	2,960	3,260	300	10.1%	30	90	120
351012	F-L Sups/Mgrs Food Prep/Serve Wrks	13,450	14,690	1,240	9.2%	120	340	460
352000	COOKS AND FOOD PREPARATION WORKERS	54,490	58,820	4,330	7.9%	430	1,710	2,140
352010	Cooks	38,760	40,850	2,090	5.4%	210	1,100	1,310
352011	Cooks/Fast Food	10,430	10,150	(280)	-2.7%	0	300	300
352012	Cooks/Institution/Cafeteria	9,410	9,910	500	5.3%	50	270	320
352013	Cooks/Private Household	50	40	(10)	-20.0%	0	0	0
352014	Cooks/Restaurant	9,680	11,550	1,870	19.3%	190	280	470
352015	Cooks/Short Order	9,200	9,210	10	0.1%	0	260	260
352021	Food Preparation Workers	15,730	17,970	2,240	14.2%	220	610	830
353000	FOOD AND BEVERAGE SERVING WORKERS	119,600	141,710	22,110	18.5%	2,210	6,710	8,920
353011	Bartenders	23,310	25,530	2,220	9.5%	220	920	1,140
353020	Fast Food and Counter Workers	53,790	66,890	13,100	24.4%	1,310	3,430	4,740
353021	Combine Food Prep/Serv Wkr/Incl Fast	45,160	57,290	12,130	26.9%	1,210	2,770	3,980
353022	Count Atts/Cafeter/Fd Conc/Coff Shop	8,630	9,600	970	11.2%	100	670	770

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
330000	PROTECTIVE SERVICE OCCUPATIONS		33,100	9.77 - 21.05
331000	FIRST-LINE SUP/MGRS PROTECT SERV WRKRS		NA	NA
331010	First-Line Sup/Mgrs of Law Enforce Wrkrs		NA	NA
331011	First-Line Sup/Mgr of Correct Officers	Work experience in related occ	45,210	18.63 - 25.26
331012	First-Line Sup/Mgr of Police/Detectives	Work experience in related occ	55,080	22.18 - 30.86
331021	F-L Sup/Mgr Fire Fight/Prevent Wrkrs	Work experience in related occ	50,510	21.01 - 29.41
331099	F-L Sups/Mgrs/Protect Service Wrkrs/AO	Work experience in related occ	37,930	12.49 - 23.29
332000	FIRE FIGHTING AND PREVENTION WORKERS		NA	NA
332011	Fire Fighters	Long-term on-the-job training	32,560	9.65 - 22.00
332020	Fire Inspectors		NA	NA
333000	LAW ENFORCEMENT WORKERS		NA	NA
333010	Bailiffs/Correctional Officers/Jailers		NA	NA
333011	Bailiffs	Moderate-term on-the-job training	40,860	12.28 - 25.85
333012	Correctional Officers/Jailers	Moderate-term on-the-job training	31,910	13.62 - 17.09
333021	Detectives/Criminal Investigators	Work experience in related occ	49,470	20.20 - 27.17
333031	Fish/Game Wardens	Long-term on-the-job training	41,450	16.48 - 23.97
333041	Parking Enforcement Workers	Short-term on-the-job training	27,700	10.66 - 16.38
333050	Police Officers		NA	NA
333051	Police/Sheriff's Patrol Officers	Long-term on-the-job training	40,530	16.59 - 22.45
333052	Transit/Railroad Police	Long-term on-the-job training	42,640	16.27 - 24.47
339000	OTHER PROTECTIVE SERVICE WORKERS		NA	NA
339011	Animal Control Workers	Moderate-term on-the-job training	32,030	7.74 - 18.51
339021	Private Detectives/Investigators	Work experience in related occ	25,070	8.28 - 13.90
339030	Security Guards/Gaming Surv Officers	Short-term on-the-job training	19,640	7.93 - 10.41
339090	Miscellaneous Protective Service Workers		NA	NA
339091	Crossing Guards	Short-term on-the-job training	19,370	7.56 - 10.70
339092	Lifgrds/Ski/Oth Rec Prot Service Wrkrs		NA	NA
339099	Protective Service Workers/All Other	Short-term on-the-job training	20,350	6.22 - 11.02
350000	FOOD PREPARATION/SERVING OCCS		16,490	6.32 - 8.86
351010	First-Line Sups/Mgrs Food Prep/Srv Wkr		NA	NA
351011	Chefs/Head Cooks	Postsecondary vocational training	25,120	9.09 - 13.47
351012	F-L Sups/Mgrs Food Prep/Serve Wrkrs	Work experience in related occ	25,090	9.06 - 14.15
352000	COOKS AND FOOD PREPARATION WORKERS		NA	NA
352010	Cooks		NA	NA
352011	Cooks/Fast Food	Short-term on-the-job training	14,930	6.13 - 8.11
352012	Cooks/Institution/Cafeteria	Long-term on-the-job training	20,290	8.15 - 11.10
352013	Cooks/Private Household	Long-term on-the-job training	NA	NA
352014	Cooks/Restaurant	Long-term on-the-job training	18,930	7.52 - 10.37
352015	Cooks/Short Order	Short-term on-the-job training	16,340	6.34 - 9.09
352021	Food Preparation Workers	Short-term on-the-job training	16,980	7.10 - 8.92
353000	FOOD AND BEVERAGE SERVING WORKERS		NA	NA
353011	Bartenders	Short-term on-the-job training	16,240	6.76 - 8.72
353020	Fast Food and Counter Workers		NA	NA
353021	Combine Food Prep/Serv Wkr/Incl Fast	Short-term on-the-job training	15,730	6.37 - 8.55
353022	Count Atts/Cafeter/Fd Conc/Coff Shop	Short-term on-the-job training	14,910	6.18 - 8.06

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
353031	Waiters/Waitresses	39,100	45,500	6,400	16.4%	640	2,200	2,840
353041	Food Servers/Nonrestaurant	3,400	3,790	390	11.5%	40	150	190
359000	OTHER FOOD PREPARATION/SERVING WRKRS	28,320	26,380	(1,940)	-6.9%	0	990	990
359011	Dining Room/Cafeteria Attend/Bar Helpers	8,770	8,010	(760)	-8.7%	0	290	290
359021	Dishwashers	12,340	10,950	(1,390)	-11.3%	0	460	460
359031	Hosts Restaurant/Lounge/Coffee Shop	4,730	5,160	430	9.1%	40	140	180
359099	Food Prep/Serving Related Wrkrs/AO	2,480	2,260	(220)	-8.9%	0	90	90
370000	BUILD/GROUNDS CLEAN/MAINT OCCS	102,350	117,780	15,430	15.1%	1,540	2,070	3,610
371010	F-L Sup/Mgrs Bldg/Grounds Clean/Maint	7,300	8,310	1,010	13.8%	100	140	240
371011	F-L Sups/Mgrs Housekeep/Janitr Wkr	4,520	5,110	590	13.1%	60	120	180
371012	F-L Sup/Mgr Land/Lawn/Grounds Wkr	2,780	3,210	430	15.5%	40	20	60
372000	BLDG CLEANING/PEST CONTROL WRKRS	76,400	86,490	10,090	13.2%	1,010	1,470	2,480
372010	Building Cleaning Wrkrs	75,830	85,800	9,970	13.1%	1,000	1,460	2,460
372011	Janitors/Cleanrs Ex Maids/Housekeep	51,900	57,050	5,150	9.9%	520	940	1,460
372012	Maids/Housekeeping Cleaners	22,540	27,750	5,210	23.1%	520	490	1,010
372101 ⁽²⁾	Cleaners/Servants/Private Household	1,300	940	(360)	-27.7%	0	30	30
372102 ⁽²⁾	Housekeepers/Butlers/Private Household	90	60	(30)	-33.3%	0	0	0
372021	Pest Control Workers	570	700	130	22.8%	10	10	20
373010	Grounds Maintenance Workers	16,890	21,030	4,140	24.5%	410	420	830
373011	Landscaping/Groundskeeping Wkr	16,040	20,120	4,080	25.4%	410	400	810
373012	Pesticide Handlers/Sprayers/Apps Veg	350	380	30	8.6%	0	10	10
373013	Tree Trimmers/Pruners	490	530	40	8.2%	0	10	10
379099 ⁽²⁾	Bldg/Grounds Cleaning/Maint Workers AO	1,770	1,950	180	10.2%	20	40	60
390000	PERSONAL CARE/SERVICE OCCS	76,700	95,190	18,490	24.1%	1,850	2,030	3,880
391000	SUPRVSRs, PERSONAL CARE/SERVICE WRKRS	2,870	3,460	590	20.6%	60	80	140
391010	F-L Sups/Mgrs of Gaming Wrkrs	510	700	190	37.3%	20	10	30
391021	F-L Sups/Mgrs of Personal Service Wrkrs	2,360	2,770	410	17.4%	40	70	110
392000	ANIMAL CARE AND SERVICE WORKERS	2,370	2,830	460	19.4%	50	50	100
392011	Animal Trainers	140	160	20	14.3%	0	10	10
392021	Nonfarm Animal Caretakers	2,230	2,670	440	19.7%	40	50	90
393000	ENTERTAINMENT ATTS & RELATED WORKERS	9,200	10,910	1,710	18.6%	170	370	540
393010	Gaming Services Workers	1,200	1,770	570	47.5%	50	50	100
393021	Motion Picture Projectionists	230	130	(100)	-43.5%	0	10	10
393031	Ushers/Lobby Attendants/Ticket Takers	1,140	1,170	30	2.6%	0	90	90
393090	Misc Entertainment Attend/Related Wrkrs	6,630	7,830	1,200	18.1%	120	220	340
393091	Amusement/Recreation Attendants	6,280	7,430	1,150	18.3%	120	210	330
393092	Costume Attendants	50	60	10	20.0%	0	0	0
393093	Locker Rm/Coatroom/Dress Rm Attend	310	340	30	9.7%	0	10	10
394000	FUNERAL SERVICE WORKERS	490	580	90	18.4%	10	10	20
394011	Embalmers	80	80	0	0.0%	0	0	0
394021	Funeral Attendants	410	500	90	22.0%	10	10	20

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
353031	Waiters/Waitresses	Short-term on-the-job training	14,230	5.85 - 6.98
353041	Food Servers/Nonrestaurant	Short-term on-the-job training	17,710	7.32 - 9.72
359000	OTHER FOOD PREPARATION/SERVING WRKRS		NA	NA
359011	Dining Room/Cafeteria Attend/Bar Helpers	Short-term on-the-job training	14,660	6.02 - 7.88
359021	Dishwashers	Short-term on-the-job training	14,240	5.98 - 7.69
359031	Hosts Restaurant/Lounge/Coffee Shop	Short-term on-the-job training	16,190	6.53 - 8.65
359099	Food Prep/Serving Related Wrks/AO	Short-term on-the-job training	18,200	7.33 - 9.91
370000	BUILD/GROUNDS CLEAN/MAINT OCCS		20,460	7.56 – 11.17
371010	F-L Sup/Mgrs Bldg/Grounds Clean/Maint		NA	NA
371011	F-L Sups/Mgrs Housekeep/Janitrl Wkr	Work experience in related occ	28,360	10.05 – 16.49
371012	F-L Sup/Mgr Land/Lawn/Grounds Wkr	Work experience in related occ	35,360	12.17 – 20.63
372000	BLDG CLEANING/PEST CONTROL WRKRS		NA	NA
372010	Building Cleaning Wrks		NA	NA
372011	Janitors/Cleanrs Ex Maids/Housekeep	Short-term on-the-job training	20,140	7.67 – 11.04
372012	Maids/Housekeeping Cleaners	Short-term on-the-job training	16,960	7.11 - 9.00
372101 ⁽²⁾	Cleaners/Servants/Private Household	Short-term on-the-job training	NA	NA
372102 ⁽²⁾	Housekeepers/Butlers/Private Household	Short-term on-the-job training	NA	NA
372021	Pest Control Workers	Moderate-term on-the-job training	27,250	9.48 – 16.48
373010	Grounds Maintenance Workers		NA	NA
373011	Landscaping/Groundskeeping Wkr	Short-term on-the-job training	21,550	7.60 – 12.51
373012	Pesticide Handlers/Sprayers/Apps Veg	Moderate-term on-the-job training	22,990	9.34 – 12.72
373013	Tree Trimmers/Pruners	Short-term on-the-job training	32,880	14.06 – 17.67
379099 ⁽²⁾	Bldg/Grounds Cleaning/Maint Workers AO	Short-term on-the-job training	22,910	8.02 – 12.55
390000	PERSONAL CARE/SERVICE OCCS		19,870	7.12 – 10.58
391000	SUPRVSRs, PERSONAL CARE/SERVICE WRKRS		NA	NA
391010	F-L Sups/Mgrs of Gaming Wrks	Postsecondary vocational training	NA	NA
391021	F-L Sups/Mgrs of Personal Service Wrks	Work experience in related occ	31,010	10.73 – 17.34
392000	ANIMAL CARE AND SERVICE WORKERS		NA	NA
392011	Animal Trainers	Moderate-term on-the-job training	30,850	11.37 – 18.15
392021	Nonfarm Animal Caretakers	Short-term on-the-job training	18,740	6.81 – 10.09
393000	ENTERTAINMENT ATTS & RELATED WORKERS		NA	NA
393010	Gaming Services Workers		NA	NA
393021	Motion Picture Projectionists	Short-term on-the-job training	18,690	6.47 - 9.67
393031	Ushers/Lobby Attendants/Ticket Takers	Short-term on-the-job training	14,510	5.95 - 7.74
393090	Misc Entertainment Attend/Related Wrks		NA	NA
393091	Amusement/Recreation Attendants	Short-term on-the-job training	15,640	6.21 - 8.36
393092	Costume Attendants	Work experience in related occ	16,930	6.50 - 9.43
393093	Locker Rm/Coatroom/Dress Rm Attend	Work experience in related occ	16,310	6.54 - 8.82
394000	FUNERAL SERVICE WORKERS		NA	NA
394011	Embalmers	Postsecondary vocational training	45,860	18.19 – 26.12
394021	Funeral Attendants	Short-term on-the-job training	20,920	7.97 – 11.12

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
395000	PERSONAL APPEARANCE WORKERS	21,050	24,710	3,660	17.4%	370	520	890
395010	Barbers and Cosmetologists	19,810	23,160	3,350	16.9%	340	490	830
395011	Barbers	1,010	940	(70)	-6.9%	0	30	30
395012	Hairdresser/Hairstylist/Cosmetologists	18,800	22,220	3,420	18.2%	340	460	800
395090	Miscellaneous Personal Appearance Wkr	1,250	1,550	300	24.0%	30	30	60
395091	Makeup Artists Theatrical/Performance	20	20	0	0.0%	0	0	0
395092	Manicurists/Pedicurists	550	740	190	34.5%	20	10	30
395093	Shampooers	80	90	10	12.5%	0	0	0
395094	Skin Care Specialists	600	700	100	16.7%	10	10	20
396000	TRANSPORTATION/TOURISM/LODGING ATTEND	2,300	2,560	260	11.3%	30	80	110
396010	Baggage Porters/Bellhops/Concierges	810	930	120	14.8%	10	30	40
396011	Baggage Porters and Bellhops	550	630	80	14.5%	10	20	30
396012	Concierges	270	300	30	11.1%	0	10	10
396020	Tour and Travel Guides	690	790	100	14.5%	10	20	30
396021	Tour Guides and Escorts	650	750	100	15.4%	10	20	30
396022	Travel Guides	40	50	10	25.0%	0	0	0
396030	Transportation Attendants	790	840	50	6.3%	10	30	40
396031	Flight Attendants	640	660	20	3.1%	0	20	20
396032	Transpo Atts/Ex Flight Atts/Bag Porters	150	180	30	20.0%	0	10	10
399000	OTHER PERSONAL CARE/SERVICE WORKERS	38,420	50,130	11,710	30.5%	1,170	920	2,090
399010	Child Care Workers	13,200	16,250	3,050	23.1%	310	450	760
399021	Personal and Home Care Aides	11,200	17,070	5,870	52.4%	590	170	760
399030	Recreation and Fitness Workers	10,270	12,380	2,110	20.5%	210	210	420
399031	Fitness Trainers/Aerobics Instructors	2,740	3,890	1,150	42.0%	120	60	180
399032	Recreation Workers	7,530	8,490	960	12.7%	100	160	260
399041	Residential Advisors	570	680	110	19.3%	10	10	20
399099	Personal Care/Service Workers/AO	3,190	3,750	560	17.6%	60	70	130
410000	SALES AND RELATED OCCUPATIONS	304,430	329,880	25,450	8.4%	2,540	9,870	12,410
411010	First-Line Sup/Managers, Sales Workers	43,960	46,630	2,670	6.1%	270	640	910
411011	F-L Sups/Mgrs of Retail Sales Workers	37,990	40,550	2,560	6.7%	260	550	810
411012	F-L Sups/Mgrs of NonRetail Sales Wkr	5,970	6,080	110	1.8%	10	90	100
412000	RETAIL SALES WORKERS	173,650	191,190	17,540	10.1%	1,750	7,140	8,890
412010	Cashiers	72,000	80,100	8,100	11.3%	810	3,270	4,080
412011	Cashiers	71,140	78,870	7,730	10.9%	770	3,230	4,000
412012	Gaming Change/Booth Cashiers	850	1,230	380	44.7%	40	40	80
412020	Counter/Rental Clerk/Parts Salespersons	12,230	12,790	560	4.6%	60	470	530
412021	Counter and Rental Clerks	7,010	7,990	980	14.0%	100	320	420
412022	Parts Salespersons	5,220	4,810	(410)	-7.9%	0	160	160
412031	Retail Salespersons	89,430	98,300	8,870	9.9%	890	3,400	4,290

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
395000	PERSONAL APPEARANCE WORKERS		NA	NA
395010	Barbers and Cosmetologists		NA	NA
395011	Barbers	Postsecondary vocational training	22,310	6.94 - 13.84
395012	Hairdresser/Hairstylist/Cosmetologists	Postsecondary vocational training	22,320	7.60 - 12.80
395090	Miscellaneous Personal Appearance Wkr		NA	NA
395091	Makeup Artists Theatrical/Performance	Short-term on-the-job training	NA	NA
395092	Manicurists/Pedicurists	Postsecondary vocational training	19,990	7.48 - 10.77
395093	Shampooers	Short-term on-the-job training	21,140	7.12 - 13.28
395094	Skin Care Specialists	Postsecondary vocational training	21,240	6.61 - 14.47
396000	TRANSPORTATION/TOURISM/LODGING ATTEND		NA	NA
396010	Baggage Porters/Bellhops/Concierges		NA	NA
396011	Baggage Porters and Bellhops	Short-term on-the-job training	19,600	6.24 - 10.15
396012	Concierges	Work experience in related occ	19,270	7.83 - 10.15
396020	Tour and Travel Guides		NA	NA
396021	Tour Guides and Escorts	Moderate-term on-the-job training	16,890	6.50 - 9.49
396022	Travel Guides	Long-term on-the-job training	29,510	12.25 - 16.06
396030	Transportation Attendants		NA	NA
396031	Flight Attendants	Long-term on-the-job training	55,540	NA
396032	Transpo Atts/Ex Flight Atts/Bag Porters	Short-term on-the-job training	16,280	6.05 - 8.93
399000	OTHER PERSONAL CARE/SERVICE WORKERS		NA	NA
399010	Child Care Workers	Short-term on-the-job training	16,820	6.75 - 8.98
399021	Personal and Home Care Aides	Short-term on-the-job training	18,060	7.72 - 9.75
399030	Recreation and Fitness Workers		NA	NA
399031	Fitness Trainers/Aerobics Instructors	Postsecondary vocational training	22,170	7.34 - 13.50
399032	Recreation Workers	Bachelor's degree	18,700	6.74 - 10.22
399041	Residential Advisors	Moderate-term on-the-job training	21,600	7.85 - 12.11
399099	Personal Care/Service Workers/AO	Moderate-term on-the-job training	19,450	7.42 - 10.47
410000	SALES AND RELATED OCCUPATIONS		28,050	7.22 - 15.72
411010	First-Line Sup/Managers, Sales Workers		NA	NA
411011	F-L Sups/Mgrs of Retail Sales Workers	Work experience in related occ	34,290	10.67 - 19.29
411012	F-L Sups/Mgrs of NonRetail Sales Wkr	Work experience in related occ	59,110	17.61 - 35.84
412000	RETAIL SALES WORKERS		NA	NA
412010	Cashiers		NA	NA
412011	Cashiers	Short-term on-the-job training	15,780	6.39 - 8.48
412012	Gaming Change/Booth Cashiers	Short-term on-the-job training	18,410	6.93 - 11.05
412020	Counter/Rental Clerk/Parts Salespersons		NA	NA
412021	Counter and Rental Clerks	Short-term on-the-job training	18,320	6.45 - 9.74
412022	Parts Salespersons	Moderate-term on-the-job training	27,390	9.51 - 15.81
412031	Retail Salespersons	Short-term on-the-job training	20,450	6.86 - 10.54

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
413000	SALES REPRESENTATIVES, SERVICES	19,060	20,760	1,700	8.9%	170	390	560
413011	Advertising Sales Agents	3,090	3,440	350	11.3%	40	60	100
413021	Insurance Sales Agents	9,100	9,230	130	1.4%	10	230	240
413031	Sec/Comm/Financial Serv Sales Agents	4,400	5,370	970	22.0%	100	40	140
413041	Travel Agents	2,480	2,720	240	9.7%	20	60	80
414010	Sales Reps, Wholesale/Manufacturing	41,120	42,250	1,130	2.7%	110	1,120	1,230
414011	Sales Reps Whlsl/Mfg Tech/Science	6,930	7,140	210	3.0%	20	190	210
414012	Sales Reps Whlsl/Mfg Ex Tech/Science	34,190	35,100	910	2.7%	90	930	1,020
419000	OTHER SALES AND RELATED WORKERS	26,640	29,050	2,410	9.0%	240	590	830
419010	Models/Demonstrators/Product Promoters	1,420	1,640	220	15.5%	20	50	70
419011	Demonstrators/Product Promoters	1,410	1,630	220	15.6%	20	50	70
419012	Models	10	10	0	0.0%	0	0	0
419020	Real Estate Brokers and Sales Agents	4,210	4,410	200	4.8%	20	70	90
419021	Real Estate Brokers	1,150	1,240	90	7.8%	10	20	30
419022	Real Estate Sales Agents	3,060	3,170	110	3.6%	10	50	60
419031	Sales Engineers	1,880	1,870	(10)	-0.5%	0	50	50
419041	Telemarketers	9,560	11,380	1,820	19.0%	180	200	380
419090	Miscellaneous Sales and Related Workers	9,570	9,750	180	1.9%	20	220	240
419091	Door Sales/News/St Vndrs/Rel Workers	3,180	2,590	(590)	-18.6%	0	80	80
419099	Sales/Related Workers All Other	6,390	7,160	770	12.1%	80	140	220
430000	OFFICE/ADMINISTRATIVE SUPPORT	476,230	495,230	19,000	4.0%	1,900	10,160	12,060
431011	F-L Sups/Mgrs Office/Admin Support Wkr	27,030	28,980	1,950	7.2%	200	520	720
432000	COMMUNICATIONS EQUIPMENT OPERATORS	5,430	4,210	(1,220)	-22.5%	0	160	160
432011	Switchboard Operators/Inc Answer Serv	4,670	3,730	(940)	-20.1%	0	140	140
432021	Telephone Operators	700	430	(270)	-38.6%	0	20	20
432099	Communications Equipment Operator AO	70	50	(20)	-28.6%	0	0	0
433000	FINANCIAL CLERKS	76,440	75,620	(820)	-1.1%	0	1,990	1,990
433011	Bill/Account Collectors	5,420	6,390	970	17.9%	100	140	240
433021	Billing/Posting Clerks/Machine Operators	9,860	9,780	(80)	-0.8%	0	240	240
433031	Bookkeeping/Accounting/Auditing Clerks	41,210	40,230	(980)	-2.4%	0	780	780
433041	Gaming Cage Workers	410	550	140	34.1%	10	20	30
433051	Payroll and Timekeeping Clerks	4,340	4,130	(210)	-4.8%	0	130	130
433061	Procurement Clerks	1,620	1,400	(220)	-13.6%	0	40	40
433071	Tellers	13,580	13,140	(440)	-3.2%	0	650	650
434000	INFORMATION AND RECORD CLERKS	107,710	122,220	14,510	13.5%	1,450	1,940	3,390
434011	Brokerage Clerks	1,160	1,120	(40)	-3.4%	0	20	20
434021	Correspondence Clerks	360	380	20	5.6%	0	10	10
434031	Court/Municipal/License Clerks	2,290	2,480	190	8.3%	20	40	60
434041	Credit Authorizers/Checkers/Clerks	810	840	30	3.7%	0	10	10
434051	Customer Service Representatives	39,540	48,820	9,280	23.5%	930	340	1,270
434061	Eligibility Interviewers/Gov't Programs	1,230	1,060	(170)	-13.8%	0	40	40
434071	File Clerks	4,540	4,500	(40)	-0.9%	0	150	150
434081	Hotel/Motel/Resort Desk Clerks	4,370	6,070	1,700	38.9%	170	190	360

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽⁴⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
413000	SALES REPRESENTATIVES, SERVICES		NA	NA
413011	Advertising Sales Agents	Moderate-term on-the-job training	42,470	12.32 - 25.92
413021	Insurance Sales Agents	Bachelor's degree	46,640	12.33 - 29.07
413031	Sec/Comm/Financial Serv Sales Agents	Bachelor's degree	72,120	17.22 - 50.32
413041	Travel Agents	Postsecondary vocational training	24,820	10.12 - 13.13
414010	Sales Reps, Wholesale/Manufacturing		NA	NA
414011	Sales Reps Whls/Mfg Tech/Science	Moderate-term on-the-job training	63,890	20.30 - 36.31
414012	Sales Reps Whls/Mfg Ex Tech/Science	Moderate-term on-the-job training	49,240	14.86 - 29.62
419000	OTHER SALES AND RELATED WORKERS		NA	NA
419010	Models/Demonstrators/Product Promoters		NA	NA
419011	Demonstrators/Product Promoters	Moderate-term on-the-job training	22,580	7.24 - 11.79
419012	Models	Moderate-term on-the-job training	NA	NA
419020	Real Estate Brokers and Sales Agents		NA	NA
419021	Real Estate Brokers	Postsecondary vocational training	78,510	15.90 - 61.39
419022	Real Estate Sales Agents	Postsecondary vocational training	43,790	12.39 - 26.89
419031	Sales Engineers	Bachelor's degree	61,390	22.67 - 35.18
419041	Telemarketers	Short-term on-the-job training	20,930	7.83 - 11.05
419090	Miscellaneous Sales and Related Workers		NA	NA
419091	Door Sales/News/St Vndrs/Rel Workers	Short-term on-the-job training	19,770	6.05 - 11.03
419099	Sales/Related Workers All Other	Moderate-term on-the-job training	37,190	10.54 - 23.11
430000	OFFICE/ADMINISTRATIVE SUPPORT		26,110	9.28 - 14.78
431011	F-L Sups/Mgrs Office/Admin Support Wkr	Work experience in related occ	40,650	13.85 - 23.22
432000	COMMUNICATIONS EQUIPMENT OPERATORS		NA	NA
432011	Switchboard Operators/Inc Answer Serv	Short-term on-the-job training	20,930	8.60 - 11.35
432021	Telephone Operators	Short-term on-the-job training	27,000	9.26 - 16.35
432099	Communications Equipment Operator AO	Short-term on-the-job training	31,340	10.61 - 16.68
433000	FINANCIAL CLERKS		NA	NA
433011	Bill/Account Collectors	Short-term on-the-job training	25,830	10.09 - 14.08
433021	Billing/Posting Clerks/Machine Operators	Short-term on-the-job training	25,680	10.10 - 13.88
433031	Bookkeeping/Accounting/Auditing Clerks	Moderate-term on-the-job training	26,060	9.93 - 14.71
433041	Gaming Cage Workers	Short-term on-the-job training	22,040	8.51 - 12.26
433051	Payroll and Timekeeping Clerks	Short-term on-the-job training	28,030	11.25 - 15.75
433061	Procurement Clerks	Short-term on-the-job training	27,790	10.97 - 15.24
433071	Tellers	Short-term on-the-job training	19,530	8.02 - 10.51
434000	INFORMATION AND RECORD CLERKS		NA	NA
434011	Brokerage Clerks	Moderate-term on-the-job training	28,460	10.93 - 16.31
434021	Correspondence Clerks	Short-term on-the-job training	27,770	10.59 - 15.51
434031	Court/Municipal/License Clerks	Short-term on-the-job training	24,750	8.61 - 14.85
434041	Credit Authorizers/Checkers/Clerks	Short-term on-the-job training	27,090	10.05 - 14.67
434051	Customer Service Representatives	Moderate-term on-the-job training	28,310	10.02 - 16.26
434061	Eligibility Interviewers/Gov't Programs	Moderate-term on-the-job training	32,070	12.73 - 17.57
434071	File Clerks	Short-term on-the-job training	20,070	7.92 - 10.97
434081	Hotel/Motel/Resort Desk Clerks	Short-term on-the-job training	17,050	7.32 - 9.01

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
434111	Interviewers Except Eligibility/Loan	2,900	3,660	760	26.2%	80	60	140
434121	Library Assistants, Clerical	3,060	3,570	510	16.7%	50	140	190
434131	Loan Interviewers, Clerks	3,460	2,560	(900)	-26.0%	0	20	20
434141	New Accounts Clerks	2,810	3,100	290	10.3%	30	60	90
434151	Order Clerks	10,790	8,860	(1,930)	-17.9%	0	230	230
434161	Human Resource Assts Ex Pay/Timepng	3,510	3,950	440	12.5%	40	80	120
434171	Receptionists/Information Clerks	23,010	27,000	3,990	17.3%	400	510	910
434181	Reserve/Trans Ticket Agents/Travl Clerks	1,060	1,150	90	8.5%	10	30	40
434190	Misc Information and Record Clerks	2,810	3,110	300	10.7%	30	40	70
434199	Information/Record Clerks/All Other	120	110	(10)	-8.3%	0	0	0
434999 ⁽²⁾	Financial/Info/Record Clerks/All Other	2,690	3,000	310	11.5%	30	40	70
435000	MATERIAL RECORD/SCHEDUL/DISP/DIST WKR	89,610	92,590	2,980	3.3%	300	2,460	2,760
435011	Cargo/Freight Agents	500	550	50	10.0%	10	10	20
435021	Couriers/Messengers	1,870	1,630	(240)	-12.8%	0	50	50
435030	Dispatchers	5,160	5,780	620	12.0%	60	90	150
435031	Police/Fire/Ambulance Dispatchers	1,700	1,840	140	8.2%	10	30	40
435032	Dispatchers Ex Police/Fire/Ambulance	3,460	3,940	480	13.9%	50	60	110
435041	Meter Readers, Utilities	1,040	700	(340)	-32.7%	0	30	30
435050	Postal Service Workers	11,950	12,040	90	0.8%	10	320	330
435051	Postal Service Clerks	1,160	1,200	40	3.4%	0	30	30
435052	Postal Service Mail Carriers	6,730	6,950	220	3.3%	20	200	220
435053	PS Mail Sort/Proc/Proc Machine Oprs	4,060	3,900	(160)	-3.9%	0	90	90
435061	Production/Planning/Expediting Clerks	7,480	7,810	330	4.4%	30	130	160
435071	Shipping/Receiving/Traffic Clerks	20,480	21,650	1,170	5.7%	120	410	530
435081	Stock Clerks/Order Fillers	38,150	38,960	810	2.1%	80	1,360	1,440
435111	Weigh/Meas/Check/Sample Recordkeep	2,600	3,030	430	16.5%	40	60	100
435199 ⁽²⁾	Material Rec/Sched/Disp/Dist Wrks/AO	400	440	40	10.0%	0	10	10
436010	Secretaries/Administrative Assistants	78,780	80,190	1,410	1.8%	140	1,340	1,480
436011	Executive Secretaries/Admin Assistants	31,910	33,600	1,690	5.3%	170	540	710
436012	Legal Secretaries	3,790	4,370	580	15.3%	60	60	120
436013	Medical Secretaries	5,690	6,640	950	16.7%	100	100	200
436014	Secretaries, Ex Legal/Medical/Exec	37,390	35,580	(1,810)	-4.8%	0	640	640
439000	OTHER OFFICE/ADMINISTRATIVE SUPPORT	91,240	91,420	180	0.2%	20	1,750	1,770
439011	Computer Operators	4,010	3,190	(820)	-20.4%	0	70	70
439020	Data Entry/Information Processing Wkrs	11,920	10,170	(1,750)	-14.7%	0	210	210
439021	Data Entry Keyers	7,820	7,120	(700)	-9.0%	0	120	120
439022	Word Processors/Typists	4,100	3,060	(1,040)	-25.4%	0	80	80
439031	Desktop Publishers	1,260	1,950	690	54.8%	70	20	90
439041	Ins Claims/Policy Processing Clerks	9,270	7,230	(2,040)	-22.0%	0	160	160
439051	Mail Clerks/Mail Machine Oprs/Ex P S	3,540	3,360	(180)	-5.1%	0	100	100
439061	Office Clerks/General	51,710	56,660	4,950	9.6%	500	990	1,490
439071	Office Machine Operators/Ex Computer	1,510	1,150	(360)	-23.8%	0	50	50
439081	Proofreaders/Copy Markers	450	390	(60)	-13.3%	0	20	20

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
434111	Interviewers Except Eligibility/Loan	Short-term on-the-job training	24,190	9.16 - 12.99
434121	Library Assistants, Clerical	Short-term on-the-job training	19,270	7.42 - 10.90
434131	Loan Interviewers, Clerks	Short-term on-the-job training	26,690	10.28 - 15.13
434141	New Accounts Clerks	Work experience in related occ	24,480	10.04 - 13.41
434151	Order Clerks	Short-term on-the-job training	23,730	8.92 - 13.17
434161	Human Resource Assts Ex Pay/Timekeepng	Short-term on-the-job training	31,130	12.00 - 17.08
434171	Receptionists/Information Clerks	Short-term on-the-job training	20,920	8.47 - 11.47
434181	Reserve/Trans Ticket Agents/Travl Clerks	Short-term on-the-job training	25,690	8.86 - 14.06
434190	Misc Information and Record Clerks		NA	NA
434199	Information/Record Clerks/All Other	Short-term on-the-job training	NA	NA
434999 ⁽²⁾	Financial/Info/Record Clerks/All Other	Short-term on-the-job training	29,430	10.44 - 16.91
435000	MATERIAL RECORD/SCHEDUL/DISP/DIST WKR		NA	NA
435011	Cargo/Freight Agents	Moderate-term on-the-job training	32,770	10.30 - 19.39
435021	Couriers/Messengers	Short-term on-the-job training	20,250	7.78 - 10.89
435030	Dispatchers		NA	NA
435031	Police/Fire/Ambulance Dispatchers	Moderate-term on-the-job training	31,690	12.88 - 17.22
435032	Dispatchers Ex Police/Fire/Ambulance	Moderate-term on-the-job training	32,830	11.82 - 19.3
435041	Meter Readers, Utilities	Short-term on-the-job training	28,950	7.50 - 18.23
435050	Postal Service Workers		NA	NA
435051	Postal Service Clerks	Short-term on-the-job training	37,940	17.24 - 20.08
435052	Postal Service Mail Carriers	Short-term on-the-job training	37,200	16.11 - 20.09
435053	PS Mail Sort/Proc/Proc Machine Oprs	Short-term on-the-job training	31,240	10.70 - 18.95
435061	Production/Planning/Expediting Clerks	Short-term on-the-job training	35,200	12.66 - 20.18
435071	Shipping/Receiving/Traffic Clerks	Short-term on-the-job training	24,970	9.53 - 13.82
435081	Stock Clerks/Order Fillers	Short-term on-the-job training	20,730	7.27 - 11.57
435111	Weigh/Meas/Check/Sample Recordkeep	Short-term on-the-job training	30,940	9.85 - 21.65
435199 ⁽²⁾	Material Rec/Sched/Disp/Dist Wrks/AO	Short-term on-the-job training	25,560	9.56 - 13.72
436010	Secretaries/Administrative Assistants		NA	NA
436011	Executive Secretaries/Admin Assistants	Moderate-term on-the-job training	29,500	11.18 - 16.69
436012	Legal Secretaries	Postsecondary vocational training	31,730	12.08 - 18.12
436013	Medical Secretaries	Postsecondary vocational training	24,060	9.83 - 13.11
436014	Secretaries, Ex Legal/Medical/Exec	Moderate-term on-the-job training	24,400	9.67 - 13.56
439000	OTHER OFFICE/ADMINISTRATIVE SUPPORT		NA	NA
439011	Computer Operators	Moderate-term on-the-job training	28,600	10.36 - 16.48
439020	Data Entry/Information Processing Wkrs		NA	NA
439021	Data Entry Keyers	Moderate-term on-the-job training	21,570	8.66 - 11.67
439022	Word Processors/Typists	Moderate-term on-the-job training	25,590	10.41 - 14.05
439031	Desktop Publishers	Postsecondary vocational training	33,270	11.40 - 20.28
439041	Ins Claims/Policy Processing Clerks	Moderate-term on-the-job training	26,290	10.39 - 14.04
439051	Mail Clerks/Mail Machine Oprs/Ex P S	Short-term on-the-job training	21,650	8.75 - 11.72
439061	Office Clerks/General	Short-term on-the-job training	22,560	8.38 - 12.83
439071	Office Machine Operators/Ex Computer	Short-term on-the-job training	22,090	8.40 - 12.42
439081	Proofreaders/Copy Markers	Short-term on-the-job training	24,450	8.14 - 14.88

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
439111	Statistical Assistants	310	300	(10)	-3.2%	0	0	0
439190	Misc Office/Administrative Support Wkrs	7,270	7,030	(240)	-3.3%	0	120	120
439199	Office/Admin Support Wkrs All Other	1,590	1,530	(60)	-3.8%	0	30	30
439999 ⁽²⁾	Sec/Admin Asst/Office Supp Wkrs AO	5,680	5,500	(180)	-3.2%	0	90	90
450000	FARMING/FISHING/FORESTRY OCCS	5,990	6,460	470	7.8%	50	150	200
451010	F-L Sups/Mgrs Farm/Fish/Forest Wkrs	520	610	90	17.3%	10	0	10
451011	F-L Sups/Mgrs Farm/Fish/Forest Wkrs	500	570	70	14.0%	10	0	10
451012	Farm Labor Contractors	30	30	0	0.0%	0	0	0
452000	AGRICULTURAL WORKERS	3,290	3,690	400	12.2%	40	100	140
452011	Agricultural Inspectors	320	310	(10)	-3.1%	0	10	10
452021	Animal Breeders	160	200	40	25.0%	0	0	0
452041	Graders/Sorters/Agricultural Products	510	540	30	5.9%	0	10	10
452090	Miscellaneous Agricultural Workers	2,300	2,640	340	14.8%	30	80	110
452091	Agricultural Equipment Operators	580	630	50	8.6%	10	20	30
452092	Farm/Labor Crop/Nursery/Greenhouse	880	1,030	150	17.0%	20	30	50
452093	Farmworkers Farm/Ranch Animals	840	970	130	15.5%	10	30	40
454000	FOREST/CONSERVATION/LOGGING WORKERS	1,710	1,660	(50)	-2.9%	0	40	40
454011	Forest and Conservation Workers	560	560	0	0.0%	0	10	10
454020	Logging Workers	1,160	1,100	(60)	-5.2%	0	20	20
454021	Fallers	90	80	(10)	-11.1%	0	0	0
454022	Logging Equipment Operators	830	800	(30)	-3.6%	0	20	20
454023	Log Graders/Scalers	240	220	(20)	-8.3%	0	0	0
459099 ⁽²⁾	Farming/Fishing/Forestry Workers AO	470	500	30	6.4%	0	10	10
470000	CONSTRUCTION/EXTRACTION OCCS	146,680	159,960	13,280	9.1%	1,330	2,730	4,060
471011	F-L Sups/Mgr Construct Trades/Extract	12,320	13,950	1,630	13.2%	160	280	440
472000	CONSTRUCTION TRADES WORKERS	116,450	127,160	10,710	9.2%	1,070	1,940	3,010
472011	Boilermakers	780	810	30	3.8%	0	20	20
472020	Brick/Block/Stonemasons	4,710	5,240	530	11.3%	50	90	140
472021	Brickmasons/Blockmasons	4,480	4,950	470	10.5%	50	80	130
472022	Stonemasons	230	300	70	30.4%	10	0	10
472031	Carpenters	27,690	28,920	1,230	4.4%	120	470	590
472040	Carpet/Floor/Tile Installers/Finishers	3,630	4,070	440	12.1%	40	60	100
472041	Carpet Installers	2,070	2,270	200	9.7%	20	30	50
472042	Floor Layers/Ex Carpet/Wood/Tiles	460	530	70	15.2%	10	10	20
472043	Floor Sanders/Finishers	450	530	80	17.8%	10	10	20
472044	Tile/Marble Setters	650	750	100	15.4%	10	10	20
472050	Cement Masons/Conc Finishers/Terrazzo	4,240	4,280	40	0.9%	0	40	40
472061	Construction Laborers	13,560	15,380	1,820	13.4%	180	120	300
472070	Construction Equipment Operators	8,750	9,370	620	7.1%	60	190	250
472071	Paving/Surfacing/Tamping Equip Oprs	1,070	1,200	130	12.1%	10	20	30
472072	Pile-Driver Operators	70	70	0	0.0%	0	0	0
472073	Opng Engrs/Other Const Equip Oprs	7,610	8,100	490	6.4%	50	170	220

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
439111	Statistical Assistants	Moderate-term on-the-job training	31,250	12.32 - 17.02
439190	Misc Office/Administrative Support Wkrs		NA	NA
439199	Office/Admin Support Wkrs All Other	Short-term on-the-job training	NA	NA
439999 ⁽²⁾	Sec/Admin Asst/Office Supp Wkrs AO	Short-term on-the-job training	27,000	9.60 - 15.39
450000	FARMING/FISHING/FORESTRY OCCS		24,520	8.03 - 14.40
451010	F-L Sups/Mgrs Farm/Fish/Forest Wkrs		NA	NA
451011	F-L Sups/Mgrs Farm/Fish/Forest Wkrs	Moderate-term on-the-job training	37,950	11.58 - 22.39
451012	Farm Labor Contractors	Moderate-term on-the-job training	31,710	8.13 - 17.13
452000	AGRICULTURAL WORKERS		NA	NA
452011	Agricultural Inspectors	Work experience in related occ	34,800	14.09 - 19.92
452021	Animal Breeders	Moderate-term on-the-job training	NA	NA
452041	Graders/Sorters/Agricultural Products	Work experience in related occ	19,150	6.86 - 11.37
452090	Miscellaneous Agricultural Workers		NA	NA
452091	Agricultural Equipment Operators	Moderate-term on-the-job training	23,940	9.37 - 13.44
452092	Farm/Labor Crop/Nursery/Greenhouse	Long-term on-the-job training	17,980	6.97 - 10.10
452093	Farmworkers Farm/Ranch Animals	Moderate-term on-the-job training	19,420	7.28 - 11.06
454000	FOREST/CONSERVATION/LOGGING WORKERS		NA	NA
454011	Forest and Conservation Workers	Moderate-term on-the-job training	31,200	13.10 - 17.54
454020	Logging Workers		NA	NA
454021	Fallers	Moderate-term on-the-job training	27,030	9.07 - 11.66
454022	Logging Equipment Operators	Moderate-term on-the-job training	24,980	8.22 - 13.20
454023	Log Graders/Scalers	Moderate-term on-the-job training	26,660	8.17 - 17.69
459099 ⁽²⁾	Farming/Fishing/Forestry Workers AO	Short-term on-the-job training	27,440	10.54 - 15.83
470000	CONSTRUCTION/EXTRACTION OCCS		38,850	13.35 - 23.73
471011	F-L Sups/Mgr Construct Trades/Extract	Work experience in related occ	53,250	19.75 - 30.27
472000	CONSTRUCTION TRADES WORKERS		NA	NA
472011	Boilermakers	Long-term on-the-job training	42,430	16.81 - 24.31
472020	Brick/Block/Stonemasons		NA	NA
472021	Brickmasons/Blockmasons	Long-term on-the-job training	44,970	17.36 - 26.15
472022	Stonemasons	Long-term on-the-job training	32,560	12.50 - 16.99
472031	Carpenters	Long-term on-the-job training	35,820	12.37 - 22.21
472040	Carpet/Floor/Tile Installers/Finishers		NA	NA
472041	Carpet Installers	Moderate-term on-the-job training	36,270	12.69 - 22.10
472042	Floor Layers/Ex Carpet/Wood/Tiles	Moderate-term on-the-job training	37,720	14.22 - 22.20
472043	Floor Sanders/Finishers	Moderate-term on-the-job training	29,110	11.54 - 16.48
472044	Tile/Marble Setters	Long-term on-the-job training	39,400	14.71 - 23.55
472050	Cement Masons/Conc Finishers/Terrazzo	Long-term on-the-job training	NA	NA
472061	Construction Laborers	Moderate-term on-the-job training	33,590	12.37 - 20.02
472070	Construction Equipment Operators		NA	NA
472071	Paving/Surfacing/Tamping Equip Oprs	Moderate-term on-the-job training	34,730	13.25 - 19.42
472072	Pile-Driver Operators	Moderate-term on-the-job training	49,910	22.28 - 27.16
472073	Opng Engrs/Other Const Equip Oprs	Moderate-term on-the-job training	43,520	16.20 - 25.53

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
472080	Drywall/Ceiling Tile Installers/Tapers	3,110	3,270	160	5.1%	20	30	50
472081	Drywall and Ceiling Tile Installers	2,320	2,440	120	5.2%	10	20	30
472082	Tapers	790	830	40	5.1%	0	10	10
472111	Electricians	16,110	17,950	1,840	11.4%	180	300	480
472121	Glaziers	870	980	110	12.6%	10	20	30
472130	Insulation Workers	900	1,060	160	17.8%	20	30	50
472140	Painters and Paperhangers	8,410	9,510	1,100	13.1%	110	150	260
472141	Painters Construction/Maintenance	8,050	9,120	1,070	13.3%	110	140	250
472142	Paperhangers	360	400	40	11.1%	0	10	10
472150	Pipelayer/Plumber/Pipefitter/Steamfitters	11,370	11,920	550	4.8%	60	190	250
472151	Pipelayers	780	840	60	7.7%	10	10	20
472152	Plumbers/Pipefitters/Steamfitters	10,590	11,080	490	4.6%	50	170	220
472161	Plasterers/Stucco Masons	850	920	70	8.2%	10	20	30
472171	Reinforcing Iron/Rebar Workers	170	190	20	11.8%	0	0	0
472181	Roofers	3,640	4,230	590	16.2%	60	80	140
472211	Sheet Metal Workers	6,080	7,210	1,130	18.6%	110	130	240
472221	Structural Iron and Steel Workers	1,610	1,860	250	15.5%	30	20	50
473010	Helpers, Construction Trades	5,640	6,120	480	8.5%	50	280	330
473011	Helpers--Brick/Block/Stone/Tile/Marble	1,230	1,360	130	10.6%	10	60	70
473012	Helpers--Carpenters	1,320	1,360	40	3.0%	0	70	70
473013	Helpers--Electricians	590	640	50	8.5%	10	30	40
473014	Helpers--Paint/Paper/Plaster/Stucco	370	400	30	8.1%	0	20	20
473015	Helpers--Pipelay/Plumb/Pipe/Steam	1,320	1,410	90	6.8%	10	70	80
473016	Helpers--Roofers	380	440	60	15.8%	10	20	30
473019	Helpers--Construction Trades/All Other	440	530	90	20.5%	10	20	30
474000	OTHER CONSTRUCTION & RELATED WRKRS	10,860	11,220	360	3.3%	40	200	240
474011	Construction/Building Inspectors	1,180	1,350	170	14.4%	20	30	50
474021	Elevator Installers and Repairers	260	290	30	11.5%	0	10	10
474031	Fence Erectors	1,170	1,200	30	2.6%	0	20	20
474041	Hazardous Materials Removal Workers	250	300	50	20.0%	10	10	20
474051	Highway Maintenance Workers	5,650	5,650	0	0.0%	0	80	80
474061	Rail-Track Laying/Maint Equip Operators	480	260	(220)	-45.8%	0	10	10
474071	Septic Tank Servicers/Sewer Pipe Clean	1,030	1,110	80	7.8%	10	20	30
474090	Misc Construction & Related Workers	850	1,060	210	24.7%	20	10	30
474091	Segmental Pavers	10	10	0	0.0%	0	0	0
474999 ⁽²⁾	Construction Trades/Rel Workers AO	840	1,050	210	25.0%	20	10	30
475000	EXTRACTION WORKERS	1,410	1,510	100	7.1%	10	40	50
475013 ⁽⁸⁾	Service Unit Operators, Oil/Gas/Mining	(8)	(8)	(8)	(8)	(8)	(8)	(8)
475021	Earth Drillers Except Oil/Gas	1,020	1,130	110	10.8%	10	20	30
475031	Explosives/Ordinance Handling/Blasters	40	40	0	0.0%	0	0	0
475040	Mining Machine Operators	80	70	(10)	-12.5%	0	0	0
475051	Rock Splitters, Quarry	110	110	0	0.0%	0	0	0
475081	Helpers--Extraction Workers	130	130	0	0.0%	0	10	10
475099 ⁽⁸⁾	Extraction Workers All Other	40	40	0	0.0%	0	0	0

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
472080	Drywall/Ceiling Tile Installers/Tapers		NA	NA
472081	Drywall and Ceiling Tile Installers	Moderate-term on-the-job training	42,180	16.47 - 24.61
472082	Tapers	Moderate-term on-the-job training	44,410	18.67 - 25.29
472111	Electricians	Long-term on-the-job training	44,490	16.43 - 26.42
472121	Glaziers	Long-term on-the-job training	34,790	11.53 - 23.44
472130	Insulation Workers	Moderate-term on-the-job training	33,310	11.54 - 21.11
472140	Painters and Paperhangers		NA	NA
472141	Painters Construction/Maintenance	Moderate-term on-the-job training	33,830	12.24 - 19.67
472142	Paperhangers	Moderate-term on-the-job training	33,430	9.97 - 20.81
472150	Pipelayer/Plumber/Pipefitter/Steamfitters		NA	NA
472151	Pipelayers	Moderate-term on-the-job training	43,790	17.54 - 25.51
472152	Plumbers/Pipefitters/Steamfitters	Long-term on-the-job training	44,720	15.44 - 27.29
472161	Plasterers/Stucco Masons	Long-term on-the-job training	38,740	13.28 - 24.44
472171	Reinforcing Iron/Rebar Workers	Long-term on-the-job training	47,230	20.67 - 27.33
472181	Roofers	Moderate-term on-the-job training	32,370	11.91 - 18.88
472211	Sheet Metal Workers	Moderate-term on-the-job training	37,980	12.94 - 22.80
472221	Structural Iron and Steel Workers	Long-term on-the-job training	48,210	16.75 - 28.95
473010	Helpers, Construction Trades		NA	NA
473011	Helpers--Brick/Block/Stone/Tile/Marble	Short-term on-the-job training	30,550	11.42 - 18.35
473012	Helpers--Carpenters	Short-term on-the-job training	23,160	8.96 - 12.56
473013	Helpers--Electricians	Short-term on-the-job training	24,980	9.50 - 14.34
473014	Helpers--Paint/Paper/Plaster/Stucco	Short-term on-the-job training	23,950	9.76 - 13.15
473015	Helpers--Pipelay/Plumb/Pipe/Steam	Short-term on-the-job training	21,060	7.72 - 11.23
473016	Helpers--Roofers	Short-term on-the-job training	23,530	9.79 - 12.88
473019	Helpers--Construction Trades/All Other	Short-term on-the-job training	22,870	8.40 - 13.12
474000	OTHER CONSTRUCTION & RELATED WRKRS		NA	NA
474011	Construction/Building Inspectors	Work experience in related occ	41,840	16.01 - 24.62
474021	Elevator Installers and Repairers	Long-term on-the-job training	51,330	19.92 - 30.71
474031	Fence Erectors	Moderate-term on-the-job training	38,070	17.89 - 20.86
474041	Hazardous Materials Removal Workers	Moderate-term on-the-job training	31,470	11.75 - 18.3
474051	Highway Maintenance Workers	Moderate-term on-the-job training	31,270	12.26 - 17.27
474061	Rail-Track Laying/Maint Equip Operators	Moderate-term on-the-job training	NA	NA
474071	Septic Tank Servicers/Sewer Pipe Clean	Moderate-term on-the-job training	31,180	13.69 - 16.56
474090	Misc Construction & Related Workers		NA	NA
474091	Segmental Pavers	Short-term on-the-job training	NA	NA
474999 ⁽²⁾	Construction Trades/Rel Workers AO	Work experience in related occ	31,580	11.35 - 18.39
475000	EXTRACTION WORKERS		NA	NA
475013 ⁽⁸⁾	Service Unit Operators, Oil/Gas/Mining	Moderate-term on-the-job training	N/A	NA
475021	Earth Drillers Except Oil/Gas	Moderate-term on-the-job training	37,640	15.15 - 21.74
475031	Explosives/Ordinance Handling/Blasters	Moderate-term on-the-job training	37,060	15.05 - 21.2
475040	Mining Machine Operators		NA	NA
475051	Rock Splitters, Quarry	Moderate-term on-the-job training	26,070	10.30 - 15.02
475081	Helpers--Extraction Workers	Short-term on-the-job training	25,190	9.82 - 13.74
475099 ⁽⁸⁾	Extraction Workers All Other	Moderate-term on-the-job training	39,090	14.06 - 22.38

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
490000	INSTALLATION/MAINTENANCE/REPAIR	117,130	124,780	7,650	6.5%	770	2,550	3,320
491011	F-L Sups/Mgr of Mechanics/Install/Repair	9,670	10,940	1,270	13.1%	130	250	380
492000	ELECT EQUIP MECHANICS/INSTALL/REPAIR	9,990	9,920	(70)	-0.7%	0	170	170
492011	Computer/ATM/Office Machine Repair	2,720	2,890	170	6.3%	20	30	50
492020	Radio/Telecomm Equipment Installers	2,760	2,390	(370)	-13.4%	0	50	50
492021	Radio Mechanics	90	60	(30)	-33.3%	0	0	0
492022	Telecomm Equip Install/Repair Ex Line	2,670	2,330	(340)	-12.7%	0	50	50
492090	Misc Electrical/Electronic Equipment	4,510	4,630	120	2.7%	10	90	100
492091	Avionics Technicians	100	100	0	0.0%	0	0	0
492092	Elec Motor/Power Tool/Related Repair	760	750	(10)	-1.3%	0	20	20
492093	Elec Installers/Repairers/Transpo Equip	140	130	(10)	-7.1%	0	0	0
492094	Elec Repair Comm/Industrial Equip	1,530	1,680	150	9.8%	20	30	50
492095	Elec Repair Powerhouse/Substn/Relay	480	460	(20)	-4.2%	0	10	10
492096	Elec Equip Install/Repair Motor Vehicle	300	340	40	13.3%	0	10	10
492097	Elec Home Entertain Equip Inst/Repair	540	400	(140)	-25.9%	0	10	10
492098	Security/Fire Alarm Systems Installers	540	650	110	20.4%	10	10	20
492099 ⁽²⁾	Elec Equip Mechanics/Install/Repair AO	130	130	0	0.0%	0	0	0
493000	VEHICLE/MOBILE EQUIP MECHANIC/INSTALLER	38,670	42,760	4,090	10.6%	410	970	1,380
493011	Aircraft Mechanics/Service Technicians	1,250	1,290	40	3.2%	10	30	40
493020	Automotive Technicians/Repairers	21,620	24,760	3,140	14.5%	310	520	830
493021	Automotive Body/Related Repairers	4,670	5,250	580	12.4%	60	120	180
493022	Automotive Glass Installers/Repairers	80	90	10	12.5%	0	0	0
493023	Automotive Service Techs/Mechanics	16,870	19,420	2,550	15.1%	260	400	660
493031	Bus/Truck Mechs/Diesel Engine Spec	7,120	7,700	580	8.1%	60	180	240
493040	Heavy Veh/Mobile Equip Techs/Mech	4,410	4,520	110	2.5%	10	110	120
493041	Farm Equipment Mechanics	1,310	1,250	(60)	-4.6%	0	30	30
493042	Mobile Heavy Equip Mechs Ex Engines	2,670	2,980	310	11.6%	30	70	100
493043	Rail Car Repairers	430	290	(140)	-32.6%	0	10	10
493050	Small Engine Mechanics	2,360	2,440	80	3.4%	10	60	70
493051	Motorboat Mechanics	940	960	20	2.1%	0	20	20
493052	Motorcycle Mechanics	630	680	50	7.9%	10	20	30
493053	Outdoor Power Equip/Sm Engine Mech	780	800	20	2.6%	0	20	20
493090	Misc Mobile Equip Mechanic/Install/Repair	1,910	2,050	140	7.3%	10	70	80
493091	Bicycle Repairers	170	200	30	17.6%	0	10	10
493092	Recreational Vehicle Service Techs	350	430	80	22.9%	10	10	20
493093	Tire Repairers/Changers	1,240	1,250	10	0.8%	0	50	50
493099 ⁽²⁾	Veh/Mobile Eqp Mechs/Instl/Repair/AO	150	180	30	20.0%	0	10	10
499000	OTHER INSTALLATION/MAINT/REPAIR OCCS	58,800	61,170	2,370	4.0%	240	1,150	1,390
499010	Control/Valve Installers and Repairers	1,030	1,060	30	2.9%	0	30	30
499011	Mechanical Door Repairers	180	200	20	11.1%	0	10	10
499012	Control/Valve Inst/Rep Ex Mechn Door	850	860	10	1.2%	0	30	30
499021	Heating/AC/Refrig Mechanics/Installers	4,310	5,180	870	20.2%	90	40	130
499031	Home Appliance Repairers	1,160	1,190	30	2.6%	0	20	20

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
490000	INSTALLATION/MAINTENANCE/REPAIR		35,270	12.31 - 20.75
491011	F-L Sups/Mgr of Mechanics/Install/Repair	Work experience in related occ	51,480	18.82 - 29.78
492000	ELECT EQUIP MECHANICS/INSTALL/REPAIR		NA	NA
492011	Computer/ATM/Office Machine Repair	Postsecondary vocational training	35,060	12.89 - 20.37
492020	Radio/Telecomm Equipment Installers		NA	NA
492021	Radio Mechanics	Postsecondary vocational training	32,440	8.73 - 20.18
492022	Telecomm Equip Install/Repair Ex Line	Postsecondary vocational training	38,150	13.98 - 23.22
492090	Misc Electrical/Electronic Equipment		NA	NA
492091	Avionics Technicians	Postsecondary vocational training	NA	NA
492092	Elec Motor/Power Tool/Related Repair	Postsecondary vocational training	39,760	14.09 - 22.07
492093	Elec Installers/Repairers/Transpo Equip	Postsecondary vocational training	36,070	13.93 - 20.91
492094	Elec Repair Comm/Industrial Equip	Postsecondary vocational training	36,890	14.17 - 20.85
492095	Elec Repair Powerhouse/Substn/Relay	Postsecondary vocational training	53,120	23.07 - 29.94
492096	Elec Equip Install/Repair Motor Vehicle	Postsecondary vocational training	26,300	10.36 - 14.50
492097	Elec Home Entertain Equip Inst/Repair	Postsecondary vocational training	26,310	9.95 - 15.19
492098	Security/Fire Alarm Systems Installers	Postsecondary vocational training	33,860	12.39 - 19.12
492099 ⁽²⁾	Elec Equip Mechanics/Install/Repair AO	Postsecondary vocational training	36,160	13.09 - 20.80
493000	VEHICLE/MOBILE EQUIP MECHANIC/INSTALLER		NA	NA
493011	Aircraft Mechanics/Service Technicians	Postsecondary vocational training	38,710	15.14 - 21.76
493020	Automotive Technicians/Repairers		NA	NA
493021	Automotive Body/Related Repairers	Long-term on-the-job training	34,750	13.14 - 20.17
493022	Automotive Glass Installers/Repairers	Long-term on-the-job training	31,660	13.40 - 17.10
493023	Automotive Service Techs/Mechanics	Postsecondary vocational training	30,890	10.87 - 17.81
493031	Bus/Truck Mechs/Diesel Engine Spec	Postsecondary vocational training	34,830	13.96 - 19.47
493040	Heavy Veh/Mobile Equip Techs/Mech		NA	NA
493041	Farm Equipment Mechanics	Postsecondary vocational training	26,720	10.19 - 15.16
493042	Mobile Heavy Equip Mechs Ex Engines	Postsecondary vocational training	37,500	14.95 - 20.83
493043	Rail Car Repairers	Long-term on-the-job training	NA	NA
493050	Small Engine Mechanics		NA	NA
493051	Motorboat Mechanics	Long-term on-the-job training	26,640	10.32 - 15.33
493052	Motorcycle Mechanics	Long-term on-the-job training	34,640	11.90 - 22.64
493053	Outdoor Power Equip/Sm Engine Mech	Moderate-term on-the-job training	26,330	9.85 - 15.13
493090	Misc Mobile Equip Mechanic/Install/Repair		NA	NA
493091	Bicycle Repairers	Moderate-term on-the-job training	18,010	7.11 - 9.72
493092	Recreational Vehicle Service Techs	Long-term on-the-job training	26,180	10.33 - 14.50
493093	Tire Repairers/Changers	Short-term on-the-job training	22,340	8.46 - 12.44
493099 ⁽²⁾	Veh/Mobile Eqp Mechs/Instl/Repair/AO	Moderate-term on-the-job training	25,270	8.50 - 15.31
499000	OTHER INSTALLATION/MAINT/REPAIR OCCS		NA	NA
499010	Control/Valve Installers and Repairers		NA	NA
499011	Mechanical Door Repairers	Moderate-term on-the-job training	27,210	10.49 - 15.08
499012	Control/Valve Inst/Rep Ex Mechn Door	Moderate-term on-the-job training	45,590	18.11 - 26.41
499021	Heating/AC/Refrig Mechanics/Installers	Long-term on-the-job training	37,060	12.85 - 21.59
499031	Home Appliance Repairers	Long-term on-the-job training	29,280	11.02 - 16.70

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
499040	Indust Machine Installation/Repair/Main	40,520	40,770	250	0.6%	30	700	730
499041	Industrial Machinery Mechanics	6,700	6,900	200	3.0%	20	180	200
499042	Maintenance/Repair Workers, General	28,530	28,890	360	1.3%	40	370	410
499043	Maintenance Workers, Machinery	2,520	2,410	(110)	-4.4%	0	70	70
499044	Millwrights	2,660	2,470	(190)	-7.1%	0	80	80
499045	Refractory Materials Repair Ex Brick	110	110	0	0.0%	0	0	0
499050	Line Installers and Repairers	3,610	4,150	540	15.0%	50	90	140
499051	Elec Power-Line Installers/Repairers	1,440	1,580	140	9.7%	10	50	60
499052	Telecomm Line Installers/Repairers	2,170	2,570	400	18.4%	40	40	80
499060	Precision Instrument/Equipment Repairers	1,020	1,100	80	7.8%	10	30	40
499061	Camera/Photo Equipment Repairers	50	50	0	0.0%	0	0	0
499062	Medical Equipment Repairers	480	540	60	12.5%	10	10	20
499063	Musical Instrument Repairers/Tuners	220	230	10	4.5%	0	10	10
499064	Watch Repairers	50	40	(10)	-20.0%	0	0	0
499069	Precision Install/Equip Repairers AO	230	250	20	8.7%	0	10	10
499090	Misc Installation/Maint/Repair Workers	7,140	7,730	590	8.3%	60	240	300
499091	Coin/Vend/Amuse Machine Serv/Repair	1,020	1,250	230	22.5%	20	20	40
499092 ⁽⁸⁾	Commercial Drivers	(8)	(8)	(8)	(8)	(8)	(8)	(8)
499093	Fabric Menders Except Garment	40	40	0	0.0%	0	0	0
499094	Locksmiths/Safe Repairers	310	320	10	3.2%	0	10	10
499095	Manufactured Bldg/Mobile Home Install	220	250	30	13.6%	0	0	0
499096	Riggers	510	500	(10)	-2.0%	0	10	10
499097	Signal/Track Switch Repairers	110	70	(40)	-36.4%	0	0	0
499098	Helpers--Install/Maint/Repair Workers	2,770	3,140	370	13.4%	40	140	180
499099 ⁽⁸⁾	Installation/Maint/Repair Workers AO	2,150	2,160	10	0.5%	0	40	40
510000	PRODUCTION OCCUPATIONS	415,890	407,430	(8,460)	-2.0%	0	9,610	9,610
511011	First-Line Sup/Mgr Production/Oper Wkrs	24,790	23,870	(920)	-3.7%	0	650	650
512000	ASSEMBLERS AND FABRICATORS	90,610	87,440	(3,170)	-3.5%	0	1,710	1,710
512011	Aircraft Struct/Surf/Rig/Sys Assemblers	90	90	0	0.0%	0	0	0
512020	Electrical/Electronic/Electromech Assemb	14,950	13,610	(1,340)	-9.0%	0	380	380
512021	Coil Winders/Tapers/Finishers	2,300	2,270	(30)	-1.3%	0	60	60
512022	Electrical/Electronic Equip Assemblers	9,740	8,630	(1,110)	-11.4%	0	250	250
512023	Electromechanical Equip Assemblers	2,920	2,710	(210)	-7.2%	0	70	70
512031	Engine/Other Machine Assemblers	3,770	3,390	(380)	-10.1%	0	80	80
512041	Structural Metal Fabricators/Fitters	3,730	3,940	210	5.6%	20	60	80
512090	Misc Assemblers and Fabricators	68,060	66,410	(1,650)	-2.4%	0	1,190	1,190
512091	Fiberglass Laminators/Fabricators	3,100	3,030	(70)	-2.3%	0	50	50
512092	Team Assemblers	54,430	53,450	(980)	-1.8%	0	950	950
512093	Timing Device Assemb/Adjust/Calibrate	190	180	(10)	-5.3%	0	0	0
512099	Assemblers/Fabricators All Other	10,350	9,750	(600)	-5.8%	0	180	180
513000	FOOD PROCESSING WRKRS	20,640	22,020	1,380	6.7%	140	450	590
513011	Bakers	4,710	5,380	670	14.2%	70	70	140

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
499040	Indust Machine Installation/Repair/Main		NA	NA
499041	Industrial Machinery Mechanics	Long-term on-the-job training	41,980	15.73 - 24.82
499042	Maintenance/Repair Workers, General	Long-term on-the-job training	31,370	11.49 - 18.32
499043	Maintenance Workers, Machinery	Long-term on-the-job training	33,100	12.68 - 18.14
499044	Millwrights	Long-term on-the-job training	47,420	19.45 - 26.24
499045	Refractory Materials Repair Ex Brick	Long-term on-the-job training	31,330	11.47 - 18.79
499050	Line Installers and Repairers		NA	NA
499051	Elec Power-Line Installers/Repairers	Long-term on-the-job training	46,190	18.90 - 25.89
499052	Telecomm Line Installers/Repairers	Long-term on-the-job training	33,880	11.28 - 21.31
499060	Precision Instrument/Equipment Repairers		NA	NA
499061	Camera/Photo Equipment Repairers	Moderate-term on-the-job training	31,150	12.55 - 17.33
499062	Medical Equipment Repairers	Moderate-term on-the-job training	39,110	15.54 - 21.83
499063	Musical Instrument Repairers/Tuners	Long-term on-the-job training	30,050	9.99 - 18.99
499064	Watch Repairers	Long-term on-the-job training	22,650	6.58 - 15.31
499069	Precision Install/Equip Repairers AO	Long-term on-the-job training	42,220	14.24 - 26.20
499090	Misc Installation/Maint/Repair Workers		NA	NA
499091	Coin/Vend/Amuse Machine Serv/Repair	Moderate-term on-the-job training	29,380	10.32 - 18.05
499092 ⁽⁸⁾	Commercial Drivers	Postsecondary vocational training	N/A	NA
499093	Fabric Menders Except Garment	Moderate-term on-the-job training	30,080	11.74 - 18.00
499094	Locksmiths/Safe Repairers	Moderate-term on-the-job training	27,140	9.55 - 15.65
499095	Manufactured Bldg/Mobile Home Install	Moderate-term on-the-job training	27,400	9.58 - 14.26
499096	Riggers	Short-term on-the-job training	47,850	15.43 - 31.64
499097	Signal/Track Switch Repairers	Long-term on-the-job training	41,400	18.22 - 21.49
499098	Helpers--Install/Maint/Repair Workers	Short-term on-the-job training	23,360	8.18 - 13.60
499099 ⁽⁸⁾	Installation/Maint/Repair Workers AO	Long-term on-the-job training	33,160	11.23 - 20.34
510000	PRODUCTION OCCUPATIONS		29,300	10.12 - 16.85
511011	First-Line Sup/Mgr Production/Oper Wkrs	Work experience in related occ	46,360	16.29 - 26.22
512000	ASSEMBLERS AND FABRICATORS		NA	NA
512011	Aircraft Struct/Surf/Rig/Sys Assemblers	Long-term on-the-job training	NA	NA
512020	Electrical/Electronic/Electromech Assemb		NA	NA
512021	Coil Winders/Tapers/Finishers	Short-term on-the-job training	26,920	9.37 - 16.49
512022	Electrical/Electronic Equip Assemblers	Short-term on-the-job training	24,300	8.68 - 13.66
512023	Electromechanical Equip Assemblers	Short-term on-the-job training	24,330	8.87 - 13.46
512031	Engine/Other Machine Assemblers	Short-term on-the-job training	33,700	12.74 - 18.48
512041	Structural Metal Fabricators/Fitters	Moderate-term on-the-job training	31,040	11.90 - 17.53
512090	Misc Assemblers and Fabricators		NA	NA
512091	Fiberglass Laminators/Fabricators	Moderate-term on-the-job training	25,230	9.08 - 14.60
512092	Team Assemblers	Moderate-term on-the-job training	25,150	9.41 - 14.22
512093	Timing Device Assemb/Adjust/Calibrate	Moderate-term on-the-job training	27,800	9.98 - 16.12
512099	Assemblers/Fabricators All Other	Moderate-term on-the-job training	28,260	9.18 - 16.89
513000	FOOD PROCESSING WRKRS		NA	NA
513011	Bakers	Long-term on-the-job training	20,650	7.97 - 11.43

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
513020	Meat/Poultry/Fish Processing Workers	10,120	10,740	620	6.1%	60	250	310
513021	Butchers/Meat Cutters	3,530	3,420	(110)	-3.1%	0	90	90
513022	Meat/Poultry/Fish Cutters/Trimmers	2,210	2,550	340	15.4%	30	50	80
513023	Slaughterers/Meat Packers	4,370	4,780	410	9.4%	40	110	150
513090	Miscellaneous Food Processing Workers	5,810	5,890	80	1.4%	10	130	140
513091	Food/Tobacco Bake/Dry Mach Op/Tndr	600	590	(10)	-1.7%	0	10	10
513092	Food Batchmakers	2,640	2,730	90	3.4%	10	60	70
513093	Food Cooking Machine Opers/Tenders	2,180	2,200	20	0.9%	0	40	40
513099 ⁽²⁾	Food Processing Workers All Other	400	370	(30)	-7.5%	0	10	10
514000	METAL WORKERS AND PLASTIC WORKERS	112,740	108,370	(4,370)	-3.9%	0	2,820	2,820
514010	Computer Control Programmers/Operator	10,920	11,700	780	7.1%	80	390	470
514011	Computer Control Machine Tool Oper	9,850	10,580	730	7.4%	70	350	420
514012	Num Tool/Process Control Programmrs	1,070	1,130	60	5.6%	10	40	50
514020	Forming Machine Setter/Operator/Tender	8,130	7,850	(280)	-3.4%	0	210	210
514021	Extrude/Draw Mach Setter/Oper/Tender	5,070	5,050	(20)	-0.4%	0	110	110
514022	Forge Machine Setter/Operator/Tender	2,170	1,980	(190)	-8.8%	0	70	70
514023	Rolling Machine Setter/Operator/Tender	890	820	(70)	-7.9%	0	30	30
514030	Machine Tool Cutting Setter/Oper/Tender	27,690	23,810	(3,880)	-14.0%	0	700	700
514031	Cut/Punch/Press Setter/Oper/Tender	14,400	12,110	(2,290)	-15.9%	0	280	280
514032	Drill/Bore Tool Setter/Oper/Tender	2,550	2,140	(410)	-16.1%	0	80	80
514033	Grind/Lap/Polish/Buf Set/Oper/Tender	5,500	5,180	(320)	-5.8%	0	130	130
514034	Lathe/Turn Tool Setter/Oper/Tender	4,260	3,550	(710)	-16.7%	0	170	170
514035	Mill/Plane Machine Setter/Oper/Tender	990	830	(160)	-16.2%	0	30	30
514041	Machinists	15,540	15,030	(510)	-3.3%	0	320	320
514050	Metal Furnace and Kiln Operator/Tender	1,660	1,670	10	0.6%	0	50	50
514051	Metal-Refining Furnace Oper/Tender	660	660	0	0.0%	0	20	20
514052	Pourers/Casters, Metal	1,010	1,020	10	1.0%	0	30	30
514060	Model Makers/Patternmakers	1,090	900	(190)	-17.4%	0	30	30
514061	Model Makers	450	380	(70)	-15.6%	0	10	10
514062	Patternmakers	650	520	(130)	-20.0%	0	20	20
514070	Molders/Molding Machine Set/Oper/Tend	9,180	8,390	(790)	-8.6%	0	190	190
514071	Foundry Mold/Coremakers	2,560	2,060	(500)	-19.5%	0	50	50
514072	Mold/Core/Cast Setter/Oper/Tender	6,630	6,330	(300)	-4.5%	0	130	130
514081	Multiple Machine Tool Set/Oper/Tender	5,300	5,550	250	4.7%	30	80	110
514111	Tool and Die Makers	6,860	6,270	(590)	-8.6%	0	170	170
514120	Welding/Soldering/Brazing Workers	18,920	20,380	1,460	7.7%	150	530	680
514121	Welders/Cutters/Solderers/Brazers	16,140	17,460	1,320	8.2%	130	450	580
514122	Weld/Sold/Braze Machine Set/Op/Tend	2,770	2,930	160	5.8%	20	80	100
514190	Misc Metal Workers and Plastic Workers	7,440	6,820	(620)	-8.3%	0	160	160
514191	Heat Treat Equip Set/Op/Tender	1,250	1,220	(30)	-2.4%	0	30	30
514192	Lay-Out Workers	560	450	(110)	-19.6%	0	10	10
514193	Plate/Coat Machine Set/Op/Tender	1,080	1,090	10	0.9%	0	20	20
514194	Tool Grinders/Filers/Sharpeners	920	770	(150)	-16.3%	0	20	20
514199	Metal Wkrs/Plastic Wkrs All Other	3,630	3,280	(350)	-9.6%	0	70	70

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
513020	Meat/Poultry/Fish Processing Workers		NA	NA
513021	Butchers/Meat Cutters	Long-term on-the-job training	25,800	9.22 - 15.26
513022	Meat/Poultry/Fish Cutters/Trimmers	Short-term on-the-job training	24,390	9.28 - 14.26
513023	Slaughterers/Meat Packers	Moderate-term on-the-job training	20,830	8.98 - 10.97
513090	Miscellaneous Food Processing Workers		NA	NA
513091	Food/Tobacco Bake/Dry Mach Op/Tndr	Short-term on-the-job training	26,330	9.95 - 14.95
513092	Food Batchmakers	Short-term on-the-job training	25,100	9.76 - 14.15
513093	Food Cooking Machine Opers/Tenders	Short-term on-the-job training	31,250	12.11 - 16.79
513099 ⁽²⁾	Food Processing Workers All Other	Short-term on-the-job training	20,390	8.19 - 10.85
514000	METAL WORKERS AND PLASTIC WORKERS		NA	NA
514010	Computer Control Programmers/Operator		NA	NA
514011	Computer Control Machine Tool Oper	Long-term on-the-job training	30,660	11.34 - 17.30
514012	Num Tool/Process Control Programms	Long-term on-the-job training	41,450	15.80 - 23.76
514020	Forming Machine Setter/Operator/Tender		NA	NA
514021	Extrude/Draw Mach Setter/Oper/Tender	Moderate-term on-the-job training	26,570	10.67 - 15.02
514022	Forge Machine Setter/Operator/Tender	Moderate-term on-the-job training	28,110	9.63 - 16.49
514023	Rolling Machine Setter/Operator/Tender	Moderate-term on-the-job training	29,940	10.76 - 17.42
514030	Machine Tool Cutting Setter/Oper/Tender		NA	NA
514031	Cut/Punch/Press Setter/Oper/Tender	Moderate-term on-the-job training	26,700	10.30 - 14.95
514032	Drill/Bore Tool Setter/Oper/Tender	Moderate-term on-the-job training	28,960	10.63 - 16.69
514033	Grind/Lap/Polish/Buf Set/Oper/Tender	Moderate-term on-the-job training	28,440	10.60 - 16.31
514034	Lathe/Turn Tool Setter/Oper/Tender	Moderate-term on-the-job training	31,270	11.94 - 17.63
514035	Mill/Plane Machine Setter/Oper/Tender	Moderate-term on-the-job training	28,180	10.83 - 15.89
514041	Machinists	Long-term on-the-job training	34,740	13.26 - 19.96
514050	Metal Furnace and Kiln Operator/Tender		NA	NA
514051	Metal-Refining Furnace Oper/Tender	Moderate-term on-the-job training	32,930	13.23 - 18.88
514052	Pourers/Casters, Metal	Moderate-term on-the-job training	29,260	11.93 - 16.38
514060	Model Makers/Patternmakers		NA	NA
514061	Model Makers	Moderate-term on-the-job training	41,410	17.20 - 22.47
514062	Patternmakers	Moderate-term on-the-job training	33,820	12.74 - 19.40
514070	Molders/Molding Machine Set/Oper/Tend		NA	NA
514071	Foundry Mold/Coremakers	Moderate-term on-the-job training	25,650	10.30 - 13.90
514072	Mold/Core/Cast Setter/Oper/Tender	Moderate-term on-the-job training	27,060	9.88 - 15.96
514081	Multiple Machine Tool Set/Oper/Tender	Moderate-term on-the-job training	30,380	12.33 - 16.64
514111	Tool and Die Makers	Long-term on-the-job training	42,020	16.77 - 23.60
514120	Welding/Soldering/Brazing Workers		NA	NA
514121	Welders/Cutters/Solderers/Brazers	Postsecondary vocational training	31,130	12.56 - 16.98
514122	Weld/Sold/Braze Machine Set/Op/Tend	Moderate-term on-the-job training	28,910	11.30 - 16.02
514190	Misc Metal Workers and Plastic Workers		NA	NA
514191	Heat Treat Equip Set/Op/Tender	Moderate-term on-the-job training	29,790	11.65 - 16.85
514192	Lay-Out Workers	Moderate-term on-the-job training	35,990	14.96 - 19.98
514193	Plate/Coat Machine Set/Op/Tender	Moderate-term on-the-job training	25,630	10.06 - 14.28
514194	Tool Grinders/Filers/Sharpeners	Moderate-term on-the-job training	34,520	12.75 - 20.69
514199	Metal Wkrs/Plastic Wkrs All Other	Moderate-term on-the-job training	42,570	14.84 - 26.25

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
515000	PRINTING WORKERS	26,810	26,620	(190)	-0.7%	0	680	680
515010	Bookbinders and Bindery Workers	7,860	8,040	180	2.3%	20	210	230
515011	Bindery Workers	7,630	7,790	160	2.1%	20	200	220
515012	Bookbinders	230	250	20	8.7%	0	10	10
515020	Printers	17,500	17,210	(290)	-1.7%	0	440	440
515021	Job Printers	1,980	2,080	100	5.1%	10	50	60
515022	Prepress Technicians/Workers	4,100	3,330	(770)	-18.8%	0	100	100
515023	Printing Machine Operators	11,420	11,800	380	3.3%	40	290	330
515099 ⁽²⁾	Printing Workers All Other	1,450	1,370	(80)	-5.5%	0	40	40
516000	TEXTILE/APPAREL/FURNISHING WORKERS	16,150	14,960	(1,190)	-7.4%	0	330	330
516011	Laundry/Dry-Cleaning Workers	4,730	5,130	400	8.5%	40	120	160
516021	Pressers/Textile/Garment/Rel Materials	1,250	1,260	10	0.8%	0	20	20
516031	Sewing Machine Operators	4,560	4,100	(460)	-10.1%	0	50	50
516040	Shoe and Leather Workers	1,210	490	(720)	-59.5%	0	30	30
516041	Shoe/Leather Workers/Repairers	660	300	(360)	-54.5%	0	30	30
516042	Shoe Machine Operators/Tenders	550	190	(360)	-65.5%	0	10	10
516050	Tailors, Dressmakers, and Sewers	1,050	880	(170)	-16.2%	0	20	20
516051	Sewers, Hand	210	180	(30)	-14.3%	0	0	0
516052	Tailors/Dressmakers/Custom Sewers	840	700	(140)	-16.7%	0	20	20
516060	Textile Machine Setter/Operator/Tender	1,400	1,260	(140)	-10.0%	0	30	30
516061	Textile Bleach/Dye Machine Oper/Tend	510	470	(40)	-7.8%	0	10	10
516062	Textile Cut Machine Setter/Oper/Tender	360	310	(50)	-13.9%	0	10	10
516063	Textile Knit/Weave Mach Set/Op/Tend	310	270	(40)	-12.9%	0	0	0
516064	Textile Wind/Twist/Draw Set/Op/Tend	220	210	(10)	-4.5%	0	0	0
516090	Misc Textile/Apparel/Furnishings Workers	1,940	1,840	(100)	-5.2%	0	60	60
516091	Extrude/Form Set/Op/Tnd Synth/Glass	200	210	10	5.0%	0	10	10
516092	Fabric/Apparel Patternmakers	410	440	30	7.3%	0	10	10
516093	Upholsterers	1,140	980	(160)	-14.0%	0	40	40
516099	Textile/Apparel/Furnishing Workers AO	190	200	10	5.3%	0	0	0
517000	WOODWORKERS	13,020	14,240	1,220	9.4%	120	490	610
517011	Cabinetmakers/Bench Carpenters	4,180	4,620	440	10.5%	40	130	170
517021	Furniture Finishers	610	630	20	3.3%	0	20	20
517030	Model Makers/Patternmakers, Wood	320	330	10	3.1%	0	10	10
517031	Model Makers, Wood	90	90	0	0.0%	0	0	0
517032	Patternmakers, Wood	230	230	0	0.0%	0	10	10
517040	Woodworking Machine Set/Oper/Tend	7,280	7,970	690	9.5%	70	290	360
517041	Saw Machine Set/Oper/Tend	2,450	2,750	300	12.2%	30	100	130
517042	Wood Machine Set/Op/Tend Ex Saw	4,840	5,220	380	7.9%	40	200	240
517099	Wood Workers, All Other	630	690	60	9.5%	10	30	40

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
515000	PRINTING WORKERS		NA	NA
515010	Bookbinders and Bindery Workers		NA	NA
515011	Bindery Workers	Moderate-term on-the-job training	23,080	7.95 - 13.07
515012	Bookbinders	Moderate-term on-the-job training	30,480	10.32 - 18.92
515020	Printers		NA	NA
515021	Job Printers	Long-term on-the-job training	34,240	12.02 - 19.51
515022	Prepress Technicians/Workers	Long-term on-the-job training	33,480	11.78 - 19.84
515023	Printing Machine Operators	Moderate-term on-the-job training	32,840	11.31 - 19.35
515099 ⁽²⁾	Printing Workers All Other	Moderate-term on-the-job training	24,870	8.67 - 13.56
516000	TEXTILE/APPAREL/FURNISHING WORKERS		NA	NA
516011	Laundry/Dry-Cleaning Workers	Moderate-term on-the-job training	16,780	6.70 - 9.17
516021	Pressers/Textile/Garment/Rel Materials	Short-term on-the-job training	17,930	7.49 - 9.29
516031	Sewing Machine Operators	Moderate-term on-the-job training	20,690	7.95 - 11.12
516040	Shoe and Leather Workers		NA	NA
516041	Shoe/Leather Workers/Repairers	Long-term on-the-job training	NA	NA
516042	Shoe Machine Operators/Tenders	Moderate-term on-the-job training	20,410	7.94 - 11.94
516050	Tailors, Dressmakers, and Sewers		NA	NA
516051	Sewers, Hand	Short-term on-the-job training	18,730	7.58 - 9.60
516052	Tailors/Dressmakers/Custom Sewers	Work experience in related occ	21,930	8.62 - 12.02
516060	Textile Machine Setter/Operator/Tender		NA	NA
516061	Textile Bleach/Dye Machine Oper/Tend	Moderate-term on-the-job training	19,520	7.92 - 10.77
516062	Textile Cut Machine Setter/Oper/Tender	Moderate-term on-the-job training	23,570	8.36 - 12.70
516063	Textile Knit/Weave Mach Set/Op/Tend	Long-term on-the-job training	23,910	9.17 - 12.68
516064	Textile Wind/Twist/Draw Set/Op/Tend	Moderate-term on-the-job training	23,520	8.70 - 13.33
516090	Misc Textile/Apparel/Furnishings Workers		NA	NA
516091	Extrude/Form Set/Op/Tnd Synth/Glass	Moderate-term on-the-job training	32,580	12.22 - 17.22
516092	Fabric/Apparel Patternmakers	Long-term on-the-job training	24,420	9.97 - 12.14
516093	Upholsterers	Long-term on-the-job training	24,760	9.87 - 13.60
516099	Textile/Apparel/Furnishing Workers AO	Moderate-term on-the-job training	23,430	8.99 - 13.40
517000	WOODWORKERS		NA	NA
517011	Cabinetmakers/Bench Carpenters	Long-term on-the-job training	27,720	10.37 - 16.03
517021	Furniture Finishers	Long-term on-the-job training	21,960	8.50 - 11.48
517030	Model Makers/Patternmakers, Wood		NA	NA
517031	Model Makers, Wood	Long-term on-the-job training	28,580	11.43 - 16.66
517032	Patternmakers, Wood	Long-term on-the-job training	32,630	13.15 - 17.76
517040	Woodworking Machine Set/Oper/Tend		NA	NA
517041	Saw Machine Set/Oper/Tend	Moderate-term on-the-job training	22,570	9.11 - 12.39
517042	Wood Machine Set/Op/Tend Ex Saw	Moderate-term on-the-job training	23,800	9.28 - 13.56
517099	Wood Workers, All Other	Moderate-term on-the-job training	NA	NA

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
518000	PLANT AND SYSTEM OPERATORS	6,170	6,410	240	3.9%	20	190	210
518010	Power Plant Oper/Distribute/Dispatch	1,280	1,230	(50)	-3.9%	0	40	40
518021	Stationary Engineers/Boiler Operators	1,240	1,160	(80)	-6.5%	0	30	30
518031	Water/Lqd Waste Treat Plant, Sys Op	2,350	2,670	320	13.6%	30	70	100
518090	Miscellaneous Plant and System Oper	1,300	1,350	50	3.8%	10	40	50
518091	Chemical Plant, System Operators	570	610	40	7.0%	0	20	20
518092	Gas Plant Operators	280	270	(10)	-3.6%	0	10	10
518093	Petro Pump Sys Op/Refine Op/Gauge	80	70	(10)	-12.5%	0	0	0
518099	Plant/System Operators, All Other	370	400	30	8.1%	0	10	10
519000	OTHER PRODUCTION OCCUPATIONS	104,960	103,500	(1,460)	-1.4%	0	2,300	2,300
519010	Chemical Proc Machine Set/Oper/Tend	2,480	2,640	160	6.5%	20	60	80
519011	Chemical Equipment Oper/Tenders	1,220	1,380	160	13.1%	20	30	50
519012	Sep/Filtr/Clarify/Prec/Still Set/Op/Tend	1,260	1,260	0	0.0%	0	30	30
519020	Crush/Grind/Polish/Mix/Blend Workers	7,490	7,840	350	4.7%	40	160	200
519021	Crush/Grind/Polish Set/Oper/Tend	1,740	1,810	70	4.0%	10	40	50
519022	Grinding/Polishing Workers, Hand	2,390	2,450	60	2.5%	10	50	60
519023	Mix/Blend Machine Set/Oper/Tend	3,360	3,590	230	6.8%	20	70	90
519030	Cutting Workers	4,850	4,800	(50)	-1.0%	0	90	90
519031	Cutters/Trimmers, Hand	630	600	(30)	-4.8%	0	10	10
519032	Cut/Slice Machine Set/Oper/Tend	4,220	4,200	(20)	-0.5%	0	70	70
519041	Extrud/Form/Press/Compct Set/Op/Tend	2,880	3,010	130	4.5%	10	70	80
519051	Furnace/Kiln/Oven/Drier/Kettle Op/Tend	610	650	40	6.6%	0	20	20
519061	Inspect/Test/Sort/Sample/Weighers	15,240	13,620	(1,620)	-10.6%	0	340	340
519071	Jewel/Precious Stone/Metal Workers	270	230	(40)	-14.8%	0	10	10
519080	Medical/Dental/Ophthalmic Lab Techs	2,510	2,580	70	2.8%	10	70	80
519081	Dental Laboratory Technicians	1,300	1,330	30	2.3%	0	40	40
519082	Medical Appliance Technicians	100	120	20	20.0%	0	0	0
519083	Ophthalmic Laboratory Technicians	1,110	1,130	20	1.8%	0	30	30
519111	Packaging/Filling Machine Oper/Tend	16,260	17,090	830	5.1%	80	360	440
519120	Painting Workers	7,960	8,340	380	4.8%	40	180	220
519121	Coat/Paint/Spray Machine Set/Op/Tnd	5,840	6,010	170	2.9%	20	130	150
519122	Painters, Transportation Equipment	980	1,100	120	12.2%	10	20	30
519123	Painting/Coating/Decorating Workers	1,140	1,230	90	7.9%	10	30	40
519130	Photo Process Workers/Machine Oper	1,530	1,460	(70)	-4.6%	0	40	40
519131	Photographic Process Workers	720	620	(100)	-13.9%	0	20	20
519132	Photographic Process Machine Oper	800	840	40	5.0%	0	20	20
519141 ⁽⁸⁾	Semiconductor Processors	(8)	(8)	(8)	(8)	(8)	(8)	(8)
519190	Miscellaneous Production Workers	42,830	41,190	(1,640)	-3.8%	0	920	920
519191	Cementing/Gluing Machine Oper/Tend	1,000	1,000	0	0.0%	0	20	20
519192	Clean/Wash/Pickling Equip Oper/Tend	1,370	1,140	(230)	-16.8%	0	30	30
519193	Cooling/Freezing Equip Oper/Tend	130	130	0	0.0%	0	0	0
519194	Etchers/Engravers	350	350	0	0.0%	0	10	10
519195	Molders/Shapers/Casters, Ex M/P	650	700	50	7.7%	10	20	30
519196	Paper Goods Machine Set/Oper/Tend	8,390	8,090	(300)	-3.6%	0	160	160

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
518000	PLANT AND SYSTEM OPERATORS		NA	NA
518010	Power Plant Oper/Distribute/Dispatch	Long-term on-the-job training	NA	NA
518021	Stationary Engineers/Boiler Operators	Long-term on-the-job training	37,650	15.09 - 20.83
518031	Water/Lqd Waste Treat Plant, Sys Op	Long-term on-the-job training	38,070	15.65 - 20.91
518090	Miscellaneous Plant and System Oper		NA	NA
518091	Chemical Plant, System Operators	Long-term on-the-job training	35,850	14.05 - 19.62
518092	Gas Plant Operators	Long-term on-the-job training	53,260	20.76 - 31.67
518093	Petro Pump Sys Op/Refine Op/Gauge	Long-term on-the-job training	47,900	20.28 - 26.76
518099	Plant/System Operators, All Other	Long-term on-the-job training	33,200	12.00 - 19.79
519000	OTHER PRODUCTION OCCUPATIONS		NA	NA
519010	Chemical Proc Machine Set/Oper/Tend		NA	NA
519011	Chemical Equipment Oper/Tenders	Moderate-term on-the-job training	36,440	12.82 - 21.17
519012	Sep/Filtr/Clarify/Prec/Still Set/Op/Tend	Moderate-term on-the-job training	30,280	11.78 - 16.85
519020	Crush/Grind/Polish/Mix/Blend Workers		NA	NA
519021	Crush/Grind/Polish Set/Oper/Tend	Moderate-term on-the-job training	28,470	11.15 - 15.58
519022	Grinding/Polishing Workers, Hand	Moderate-term on-the-job training	26,800	9.81 - 15.25
519023	Mix/Blend Machine Set/Oper/Tend	Moderate-term on-the-job training	29,150	10.95 - 16.33
519030	Cutting Workers		NA	NA
519031	Cutters/Trimmers, Hand	Short-term on-the-job training	24,860	9.57 - 13.63
519032	Cut/Slice Machine Set/Oper/Tend	Moderate-term on-the-job training	25,500	9.52 - 14.71
519041	Extrud/Form/Press/Compct Set/Op/Tend	Moderate-term on-the-job training	31,090	11.82 - 18.57
519051	Furnace/Kiln/Oven/Drier/Kettle Op/Tend	Moderate-term on-the-job training	28,430	11.07 - 15.89
519061	Inspect/Test/Sort/Sample/Weighers	Moderate-term on-the-job training	29,020	10.28 - 16.61
519071	Jewel/Precious Stone/Metal Workers	Postsecondary vocational training	34,070	12.14 - 17.27
519080	Medical/Dental/Ophthalmic Lab Techs		NA	NA
519081	Dental Laboratory Technicians	Long-term on-the-job training	31,340	10.76 - 16.13
519082	Medical Appliance Technicians	Long-term on-the-job training	32,980	10.49 - 19.35
519083	Ophthalmic Laboratory Technicians	Moderate-term on-the-job training	24,450	9.22 - 13.54
519111	Packaging/Filling Machine Oper/Tend	Short-term on-the-job training	24,060	8.93 - 14.19
519120	Painting Workers		NA	NA
519121	Coat/Paint/Spray Machine Set/Op/Tnd	Moderate-term on-the-job training	27,800	10.84 - 15.42
519122	Painters, Transportation Equipment	Moderate-term on-the-job training	31,930	12.70 - 16.94
519123	Painting/Coating/Decorating Workers	Short-term on-the-job training	22,220	8.21 - 12.82
519130	Photo Process Workers/Machine Oper		NA	NA
519131	Photographic Process Workers	Moderate-term on-the-job training	23,010	7.68 - 13.38
519132	Photographic Process Machine Oper	Short-term on-the-job training	20,440	8.08 - 10.93
519141 ⁽⁸⁾	Semiconductor Processors	Associate degree	N/A	NA
519190	Miscellaneous Production Workers		NA	NA
519191	Cementing/Gluing Machine Oper/Tend	Moderate-term on-the-job training	26,360	9.80 - 15.03
519192	Clean/Wash/Pickling Equip Oper/Tend	Moderate-term on-the-job training	23,580	8.81 - 13.01
519193	Cooling/Freezing Equip Oper/Tend	Moderate-term on-the-job training	28,400	10.54 - 17.65
519194	Etchers/Engravers	Long-term on-the-job training	28,540	9.85 - 17.06
519195	Molders/Shapers/Casters, Ex M/P	Moderate-term on-the-job training	26,600	10.96 - 14.47
519196	Paper Goods Machine Set/Oper/Tend	Moderate-term on-the-job training	32,590	13.03 - 17.77

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
519197	Tire Builders	150	180	30	20.0%	0	0	0
519198	Helpers--Production Workers	16,330	15,870	(460)	-2.8%	0	410	410
519199 ⁽⁸⁾	Production Workers, All Other	14,520	13,790	(730)	-5.0%	0	260	260
530000	TRANSPORTATION/MATERIAL MOVING	232,480	249,470	16,990	7.3%	1,700	5,310	7,010
531000	SUP, TRANSP/MATERIAL MOVING WORKERS	7,710	8,860	1,150	14.9%	120	170	290
531011	Aircraft Cargo Handling Supervisors	210	250	40	19.0%	0	0	0
531021	F-L Sup/Mgr Help/Labor/Material Movers	3,160	3,640	480	15.2%	50	70	120
531031	F-L Sup/Mgr Transpo/Material-Move Op	4,340	4,970	630	14.5%	60	90	150
532000	AIR TRANSPORTATION WORKERS	1,780	1,800	20	1.1%	0	50	50
532010	Aircraft Pilots and Flight Engineers	1,430	1,420	(10)	-0.7%	0	30	30
532011	Airline Pilots/Copilots/Flight Engineers	930	860	(70)	-7.5%	0	20	20
532012	Commercial Pilots	500	560	60	12.0%	10	10	20
532020	Air Traffic Controllers/Airfield Oper Spec	350	390	40	11.4%	0	20	20
532021	Air Traffic Controllers	340	370	30	8.8%	0	10	10
532022	Airfield Operations Specialists	20	20	0	0.0%	0	0	0
532099 ⁽²⁾	Air Transportation Workers, All Other	130	140	10	7.7%	0	10	10
533000	MOTOR VEHICLE OPERATORS	100,680	110,550	9,870	9.8%	990	1,520	2,510
533011	Ambulance Drivers/Attendants Ex EMT	730	910	180	24.7%	20	10	30
533020	Bus Drivers	13,730	15,030	1,300	9.5%	130	350	480
533021	Bus Drivers, Transit/Intercity	3,150	3,580	430	13.7%	40	80	120
533022	Bus Drivers, School	10,580	11,450	870	8.2%	90	270	360
533030	Driver/Sales Workers/Truck Drivers	81,010	88,540	7,530	9.3%	750	1,110	1,860
533031	Driver/Sales Workers	6,420	6,730	310	4.8%	30	90	120
533032	Truck Drivers, Heavy/Tractor-Trailer	49,310	53,900	4,590	9.3%	460	680	1,140
533033	Truck Drivers, Light/Delivery Services	25,280	27,910	2,630	10.4%	260	350	610
533041	Taxi Drivers and Chauffeurs	4,290	5,030	740	17.2%	70	30	100
533099	Motor Vehicle Operators, All Other	930	1,050	120	12.9%	10	20	30
534000	RAIL TRANSPORTATION WORKERS	1,900	1,400	(500)	-26.3%	0	80	80
534010	Locomotive Engineers/Operators	860	750	(110)	-12.8%	0	40	40
534011	Locomotive Engineers	830	730	(100)	-12.0%	0	40	40
534012	Locomotive Firers	10	10	0	0.0%	0	0	0
534013	Rail Yard Engineers/Dinkey Op/Hostlr	20	20	0	0.0%	0	0	0
534021	Railroad Brake/Signal/Switch Operators	230	70	(160)	-69.6%	0	10	10
534031	Railroad Conductors/Yardmasters	800	560	(240)	-30.0%	0	40	40
534099	Rail Transportation Workers, All Other	10	10	0	0.0%	0	0	0
535000	WATER TRANSPORTATION WORKERS	450	460	10	2.2%	0	20	20
535011	Sailors and Marine Oilers	190	210	20	10.5%	0	10	10
535020	Ship and Boat Captains/Operators	240	240	0	0.0%	0	10	10
535021	Captains/Mates/Pilots Water Vessels	220	220	0	0.0%	0	10	10
535022	Motorboat Operators	20	20	0	0.0%	0	0	0
535031 ⁽⁸⁾	Ship Engineers	(8)	(8)	(8)	(8)	(8)	(8)	(8)

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
519197	Tire Builders	Moderate-term on-the-job training	21,500	9.36 - 11.36
519198	Helpers--Production Workers	Short-term on-the-job training	22,390	8.56 - 12.50
519199 ⁽⁸⁾	Production Workers, All Other	Moderate-term on-the-job training	34,420	11.33 - 22.64
530000	TRANSPORTATION/MATERIAL MOVING		26,700	8.82 - 15.77
531000	SUP, TRANSP/MATERIAL MOVING WORKERS		NA	NA
531011	Aircraft Cargo Handling Supervisors	Work experience in related occ	43,690	14.65 - 26.67
531021	F-L Sup/Mgr Help/Labor/Material Movers	Work experience in related occ	38,500	13.74 - 22.41
531031	F-L Sup/Mgr Transpo/Material-Move Op	Work experience in related occ	44,380	16.20 - 24.88
532000	AIR TRANSPORTATION WORKERS		NA	NA
532010	Aircraft Pilots and Flight Engineers		NA	NA
532011	Airline Pilots/Copilots/Flight Engineers	Bachelor's degree	54,690	NA
532012	Commercial Pilots	Postsecondary vocational training	46,290	NA
532020	Air Traffic Controllers/Airfield Oper Spec		NA	NA
532021	Air Traffic Controllers	Bachelor's degree	57,760	18.77 - 35.99
532022	Airfield Operations Specialists	Short-term on-the-job training	38,190	13.22 - 24.04
532099 ⁽²⁾	Air Transportation Workers, All Other	Moderate-term on-the-job training	27,450	9.88 - 16.38
533000	MOTOR VEHICLE OPERATORS		NA	NA
533011	Ambulance Drivers/Attendants Ex EMT	Moderate-term on-the-job training	16,000	6.20 - 8.88
533020	Bus Drivers		NA	NA
533021	Bus Drivers, Transit/Intercity	Moderate-term on-the-job training	31,040	10.47 - 19.17
533022	Bus Drivers, School	Short-term on-the-job training	22,980	9.15 - 12.64
533030	Driver/Sales Workers/Truck Drivers		NA	NA
533031	Driver/Sales Workers	Short-term on-the-job training	25,640	8.16 - 15.57
533032	Truck Drivers, Heavy/Tractor-Trailer	Moderate-term on-the-job training	35,670	13.33 - 20.52
533033	Truck Drivers, Light/Delivery Services	Short-term on-the-job training	23,600	8.14 - 13.69
533041	Taxi Drivers and Chauffeurs	Short-term on-the-job training	18,150	7.38 - 9.75
533099	Motor Vehicle Operators, All Other	Short-term on-the-job training	19,970	6.20 - 12.40
534000	RAIL TRANSPORTATION WORKERS		NA	NA
534010	Locomotive Engineers/Operators		NA	NA
534011	Locomotive Engineers	Work experience in related occ	54,180	20.95 - 31.72
534012	Locomotive Firers	Moderate-term on-the-job training	NA	NA
534013	Rail Yard Engineers/Dinkey Op/Hostlr	Work experience in related occ	34,910	12.68 - 18.88
534021	Railroad Brake/Signal/Switch Operators	Work experience in related occ	NA	NA
534031	Railroad Conductors/Yardmasters	Work experience in related occ	47,840	18.90 - 25.82
534099	Rail Transportation Workers, All Other	Short-term on-the-job training	38,530	16.89 - 21.21
535000	WATER TRANSPORTATION WORKERS		NA	NA
535011	Sailors and Marine Oilers	Short-term on-the-job training	24,280	8.20 - 14.47
535020	Ship and Boat Captains/Operators		NA	NA
535021	Captains/Mates/Pilots Water Vessels	Work experience in related occ	44,840	14.80 - 29.56
535022	Motorboat Operators	Short-term on-the-job training	30,010	7.84 - 22.67
535031 ⁽⁸⁾	Ship Engineers	Postsecondary vocational training	NA	NA

(continued)

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Estimated Employment ⁽³⁾				Estimated Average Annual Openings ⁽³⁾		
		2000	2010	Change	Percent Change	New Jobs	Replacements ⁽⁴⁾	Total
536000	OTHER TRANSPORTATION WORKERS	3,220	3,910	690	21.4%	70	120	190
536011	Bridge and Lock Tenders	150	120	(30)	-20.0%	0	10	10
536021	Parking Lot Attendants	860	1,040	180	20.9%	20	10	30
536031	Service Station Attendants	1,730	2,230	500	28.9%	50	90	140
536041	Traffic Technicians	10	20	10	100.0%	0	0	0
536051	Transportation Inspectors	180	180	0	0.0%	0	0	0
536090	Miscellaneous Transportation Workers	280	320	40	14.3%	0	10	10
536099 ⁽⁶⁾	Transportation Workers, All Other	170	200	30	17.6%	0	10	10
537000	MATERIAL MOVING WORKERS	116,740	122,500	5,760	4.9%	580	3,350	3,930
537011	Conveyor Operators and Tenders	1,440	1,530	90	6.3%	10	40	50
537021	Crane and Tower Operators	1,090	1,130	40	3.7%	0	30	30
537030	Dredge/Excavate/Load Machine Opers	990	1,090	100	10.1%	10	30	40
537031	Dredge Operators	20	20	0	0.0%	0	0	0
537032	Excavate/Load Machine/Dragline Oper	950	1,050	100	10.5%	10	30	40
537033	Load Machine Oper/Underground Min	20	20	0	0.0%	0	0	0
537041	Hoist and Winch Operators	80	80	0	0.0%	0	0	0
537051	Industrial Truck/Tractor Operators	18,980	19,800	820	4.3%	80	260	340
537060	Laborers and Material Movers, Hand	89,470	93,710	4,240	4.7%	420	2,800	3,220
537061	Cleaners of Vehicles/Equipment	6,990	8,220	1,230	17.6%	120	270	390
537062	Labrs/Frght/Stock/Matrl Movers, Hand	47,810	48,860	1,050	2.2%	110	1,590	1,700
537063	Machine Feeders/Offbearers	6,310	5,300	(1,010)	-16.0%	0	220	220
537064	Packers/Packagers, Hand	28,350	31,340	2,990	10.5%	300	720	1,020
537070	Pumping Station Operators	140	140	0	0.0%	0	0	0
537071	Gas Compressor/Gas Station Oper	20	20	0	0.0%	0	0	0
537072	Pump Opers/Ex Wellhead Pumpers	120	120	0	0.0%	0	0	0
537081	Refuse/Recyclable Material Collectors	3,290	3,670	380	11.6%	40	140	180
537111	Shuttle Car Operators	10	10	0	0.0%	0	0	0
537121	Tank Car, Truck, and Ship Loaders	210	230	20	9.5%	0	10	10
537199	Material Moving Workers, All Other	1,050	1,130	80	7.6%	10	30	40

Notes:

- (1) **The Occupational (Occ) Codes** are based on Standard Occupational Classification (SOC) Codes. However, some of the codes are specific to the Occupational Employment Statistics (OES) Survey or the U.S. Bureau of Labor Statistics (BLS) Employment Projections. These codes are designated by footnote (2).
- (2) This code is specific to either the OES Survey or the BLS Employment Projections.
- (3) **Employment** includes self-employed and unpaid family workers. Employment is rounded to the nearest ten, with employment less than five rounded to zero. Totals may not add due to rounding.
- (4) **Replacements** are an estimate of the number of job openings expected because people have permanently left a given occupation. Permanent exits occur if someone dies, retires, or otherwise leaves the labor force. Permanent exits also include openings resulting from someone permanently changing occupations. For example, a person leaves their job as a cashier and becomes a truck driver.
- (5) **Education and Training Typically Required** means this is the most common way people are expected to enter the occupation during 2000 to 2010, although there may be other education or training accepted by employers.
- (6) **Average Annual Salary** is equal to the average hourly wage multiplied by 2,080. An occupation's average hourly wage is calculated by summing the wages of all employees in a given occupation and then dividing by the total number of employees in that occupation.

Looking for an electronic version of this table? See <http://www.dwd.state.wi.us/lmi/projections.htm>.

**Figure 2-11: Detailed 2000 – 2010 Occupational Trends
Including Typical Educational and Training Requirements and Wages (continued)**

Occ Code ⁽¹⁾	Occupational Title	Education and Training Typically Required ⁽⁵⁾	Estimated Salary and Wages	
			Average Annual Salary (\$) ⁽⁶⁾	Hourly Wage Rate – Middle Range (\$) ⁽⁷⁾
536000	OTHER TRANSPORTATION WORKERS		NA	NA
536011	Bridge and Lock Tenders	Short-term on-the-job training	35,990	15.72 - 19.08
536021	Parking Lot Attendants	Short-term on-the-job training	18,560	7.48 - 9.91
536031	Service Station Attendants	Short-term on-the-job training	17,880	7.36 - 9.14
536041	Traffic Technicians	Short-term on-the-job training	37,720	13.86 - 21.69
536051	Transportation Inspectors	Work experience in related occ	46,680	17.21 - 28.43
536090	Miscellaneous Transportation Workers		NA	NA
536099 ⁽⁸⁾	Transportation Workers, All Other	Short-term on-the-job training	24,510	8.44 - 13.38
537000	MATERIAL MOVING WORKERS		NA	NA
537011	Conveyor Operators and Tenders	Short-term on-the-job training	22,770	8.32 - 12.97
537021	Crane and Tower Operators	Moderate-term on-the-job training	33,200	12.74 - 18.29
537030	Dredge/Excavate/Load Machine Opers		NA	NA
537031	Dredge Operators	Short-term on-the-job training	NA	NA
537032	Excavate/Load Machine/Dragline Oper	Moderate-term on-the-job training	39,780	15.31 - 21.81
537033	Load Machine Oper/Underground Min	Short-term on-the-job training	30,940	11.06 - 19.27
537041	Hoist and Winch Operators	Moderate-term on-the-job training	26,550	9.50 - 13.97
537051	Industrial Truck/Tractor Operators	Short-term on-the-job training	27,880	10.98 - 15.4
537060	Laborers and Material Movers, Hand		NA	NA
537061	Cleaners of Vehicles/Equipment	Short-term on-the-job training	18,500	7.05 - 10.41
537062	Labrs/Frght/Stock/Matrl Movers, Hand	Short-term on-the-job training	21,850	8.12 - 12.16
537063	Machine Feeders/Offbearers	Short-term on-the-job training	23,170	9.17 - 13.11
537064	Packers/Packagers, Hand	Short-term on-the-job training	19,710	7.15 - 10.97
537070	Pumping Station Operators		NA	NA
537071	Gas Compressor/Gas Station Oper	Moderate-term on-the-job training	35,350	14.03 - 22.29
537072	Pump Opers/Ex Wellhead Pumpers	Moderate-term on-the-job training	35,460	12.17 - 20.98
537081	Refuse/Recyclable Material Collectors	Short-term on-the-job training	26,700	10.93 - 15.39
537111	Shuttle Car Operators	Short-term on-the-job training	NA	NA
537121	Tank Car, Truck, and Ship Loaders	Moderate-term on-the-job training	26,290	11.29 - 13.85
537199	Material Moving Workers, All Other	Short-term on-the-job training	29,570	10.11 - 18.56

Notes:

- (7) **Hourly Wage Rate – Middle Range** identifies the 25th and 75th percentiles in the hourly wage distribution for a given occupation. Fifty percent of the workers in the occupation earn wages in this range. In most cases, the lower number represents an expected starting wage, while the upper number reflects the wage of a tenured worker.
- (8) 172199 includes employment for 172151. Education/training and wages are shown separately, if available.
 194099 includes employment for 194051. Education/training and wages are shown separately, if available.
 475099 includes employment for 475013. Education/training and wages are shown separately, if available.
 499099 includes employment for 499092. Education/training and wages are shown separately, if available.
 519199 includes employment for 519141. Education/training and wages are shown separately, if available.
 536099 includes employment for 535031. Education/training and wages are shown separately, if available.

NA means information is not available.

Information was derived using the 2001 OES/Wage Survey, 2000 ES-202 and 2000 CES (3/01 Benchmark) data. Unpublished data from the U.S. Bureau of Labor Statistics and the U.S. Census Bureau was also used.

To the extent possible, the projections take into account anticipated changes in Wisconsin's economy during 2000 to 2010. It is important to note that unanticipated events may affect the accuracy of these projections.

Source: Projections Unit, Office of Economic Advisors, Wisconsin Department of Workforce Development

Looking for an electronic version of this table? See <http://www.dwd.state.wi.us/lmi/projections.htm>.

¹ For more information see “Is Your Job Next?” *Business Week*, February 3, 2003, pp. 50-60; “A Global White-Collar Migration,” *Business Week*, February 3, 2003, p. 118; “Help From Far Away,” *Newsweek*, May 12, 2003, pp. E16-E18; and “States Fight Exodus of Jobs”, *The Wall Street Journal*, June 3, 2003, p. A4.

² For more information on Standard Occupational Classifications see Executive Office of the President, Office of Management and Budget, *Standard Occupational Classification Manual 2000* (Lanham, Maryland: NTIS and Bernan Associates, October 2000). The manual is also available on-line at <http://stats.bls.gov/soc/>.

³For further information refer to U. S. Department of Labor, Bureau of Labor Statistics, “Occupational employment projections to 2010,” *Monthly Labor Review*, 124, No. 11 (November 2001), p. 82; and *Occupational Outlook Quarterly*, 45, No. 4 (Winter 2001-02), p. 9.

Wisconsin Projections 2000-2010
Appendix 1: Long Occupational Titles and Page of Detailed Occupational Trend

Occ Code	Long Occupational Title	Page of Detailed Trend in Figure 2-11
132011	Accountants and Auditors	82
272011	Actors	94
152011	Actuaries	84
231021	Administrative Law Judges, Adjudicators, and Hearing Officers	90
113011	Administrative Services Managers	80
253011	Adult Literacy, Remedial Education, and GED Teachers and Instructors	92
112011	Advertising and Promotions Managers	80
413011	Advertising Sales Agents	106
173021	Aerospace Engineering and Operations Technicians	86
172011	Aerospace Engineers	84
131011	Agents and Business Managers of Artists, Performers, and Athletes	80
194011	Agricultural and Food Science Technicians	88
172021	Agricultural Engineers	84
452091	Agricultural Equipment Operators	110
452011	Agricultural Inspectors	110
251041	Agricultural Sciences Teachers, Postsecondary	90
532021	Air Traffic Controllers	124
532099	Air Transportation Workers, All Other (OES Only)	124
531011	Aircraft Cargo Handling Supervisors	124
493011	Aircraft Mechanics and Service Technicians	114
512011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	116
532022	Airfield Operations Specialists	124
532011	Airline Pilots, Copilots, and Flight Engineers	124
533011	Ambulance Drivers and Attendants, Except Emergency Medical Technicians	124
393091	Amusement and Recreation Attendants	102
452021	Animal Breeders	110
339011	Animal Control Workers	100
392011	Animal Trainers	102
273010	Announcers	94
193091	Anthropologists and Archeologists	88
251061	Anthropology and Archeology Teachers, Postsecondary	90
132021	Appraisers and Assessors of Real Estate	82
231022	Arbitrators, Mediators, and Conciliators	90
171011	Architects, Except Landscape and Naval	84
171099	Architects, Surveyors, and Cartographers, All Other (OES Only)	84
173011	Architectural and Civil Drafters	84
251031	Architecture Teachers, Postsecondary	90
254010	Archivists, Curators, and Museum Technicians	92
251062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary	90
271099	Art and Design Workers, All Other (OES Only)	94
271011	Art Directors	94
251121	Art, Drama, and Music Teachers, Postsecondary	92

Appendix 1: Long Occupational Titles and Page of Detailed Occupational Trend

Occ Code	Long Occupational Title	Page of Detailed Trend in Figure 2-11
271019	Artists and Related Workers, All Other	94
512099	Assemblers and Fabricators, All Other	116
192011	Astronomers	86
272021	Athletes and Sports Competitors	94
299091	Athletic Trainers	98
192021	Atmospheric and Space Scientists	86
251051	Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary	90
274011	Audio and Video Equipment Technicians	96
291121	Audiologists	96
259011	Audio-Visual Collections Specialists	94
493021	Automotive Body and Related Repairers	114
493022	Automotive Glass Installers and Repairers	114
493023	Automotive Service Technicians and Mechanics	114
492091	Avionics Technicians	114
396011	Baggage Porters and Bellhops	104
333011	Bailiffs	100
513011	Bakers	116
395011	Barbers	104
353011	Bartenders	100
493091	Bicycle Repairers	114
433011	Bill and Account Collectors	106
433021	Billing and Posting Clerks and Machine Operators	106
515011	Bindery Workers	120
191021	Biochemists and Biophysicists	86
251042	Biological Science Teachers, Postsecondary	90
194021	Biological Technicians	88
172031	Biomedical Engineers	84
472011	Boilermakers	110
515012	Bookbinders	120
433031	Bookkeeping, Accounting, and Auditing Clerks	106
472021	Brickmasons and Blockmasons	110
536011	Bridge and Lock Tenders	126
274012	Broadcast Technicians	96
434011	Brokerage Clerks	106
132031	Budget Analysts	82
379099	Building and Grounds Cleaning and Maintenance Workers, All Other (OES Only)	102
493031	Bus and Truck Mechanics and Diesel Engine Specialists	114
533022	Bus Drivers, School	124
533021	Bus Drivers, Transit and Intercity	124
131199	Business Operations Specialists, All Other	82
251011	Business Teachers, Postsecondary	90
513021	Butchers and Meat Cutters	118

Occ Code	Long Occupational Title	Page of Detailed Trend in Figure 2-11
517011	Cabinetmakers and Bench Carpenters	120
499061	Camera and Photographic Equipment Repairers	116
274031	Camera Operators, Television, Video, and Motion Picture	96
535021	Captains, Mates, and Pilots of Water Vessels	124
292031	Cardiovascular Technologists and Technicians	98
435011	Cargo and Freight Agents	108
472031	Carpenters	110
472041	Carpet Installers	110
171021	Cartographers and Photogrammetrists	84
412011	Cashiers	104
472050	Cement Masons, Concrete Finishers, and Terrazzo Workers	110
519191	Cementing and Gluing Machine Operators and Tenders	122
351011	Chefs and Head Cooks	100
172041	Chemical Engineers	84
519011	Chemical Equipment Operators and Tenders	122
518091	Chemical Plant and System Operators	122
194031	Chemical Technicians	88
251052	Chemistry Teachers, Postsecondary	90
192031	Chemists	86
111011	Chief Executives	80
399010	Child Care Workers	104
211021	Child, Family, and School Social Workers	88
291011	Chiropractors	96
272032	Choreographers	94
173022	Civil Engineering Technicians	86
172051	Civil Engineers	84
131031	Claims Adjusters, Examiners, and Investigators	82
372101	Cleaners And Servants, Private Household	102
537061	Cleaners of Vehicles and Equipment	126
519192	Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders	122
212011	Clergy	88
193031	Clinical, Counseling, and School Psychologists	88
272022	Coaches and Scouts	94
519121	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	122
512021	Coil Winders, Tapers, and Finishers	116
499091	Coin, Vending, and Amusement Machine Servicers and Repairers	116
353021	Combined Food Preparation and Serving Workers, Including Fast Food	100
271021	Commercial and Industrial Designers	94
499092	Commercial Divers	116
532012	Commercial Pilots	124
432099	Communications Equipment Operators, All Other	106
251122	Communications Teachers, Postsecondary	92

Appendix 1: Long Occupational Titles and Page of Detailed Occupational Trend

Occ Code	Long Occupational Title	Page of Detailed Trend in Figure 2-11
131072	Compensation, Benefits, and Job Analysis Specialists	82
131041	Compliance Officers, Except Agriculture, Construction, Health and Safety, and Transportation	82
151011	Computer and Information Scientists, Research	82
113021	Computer and Information Systems Managers	80
172061	Computer Hardware Engineers	84
439011	Computer Operators	108
151021	Computer Programmers	82
251021	Computer Science Teachers, Postsecondary	90
151031	Computer Software Engineers, Applications	82
151032	Computer Software Engineers, Systems Software	82
151099	Computer Specialists, All Other	82
151041	Computer Support Specialists	82
151051	Computer Systems Analysts	82
492011	Computer, Automated Teller, and Office Machine Repairers	114
514011	Computer-Controlled Machine Tool Operators, Metal and Plastic	118
396012	Concierges	104
191031	Conservation Scientists	86
474011	Construction and Building Inspectors	112
472061	Construction Laborers	110
119021	Construction Managers	80
474999	Construction Trades and Related Workers, All Other (OES Only)	112
499012	Control and Valve Installers and Repairers, Except Mechanical Door	114
537011	Conveyor Operators and Tenders	126
352011	Cooks, Fast Food	100
352012	Cooks, Institution and Cafeteria	100
352013	Cooks, Private Household	100
352014	Cooks, Restaurant	100
352015	Cooks, Short Order	100
519193	Cooling and Freezing Equipment Operators and Tenders	122
333012	Correctional Officers and Jailers	100
434021	Correspondence Clerks	106
131051	Cost Estimators	82
393092	Costume Attendants	102
219099	Counselors, Social, and Religious Workers, All Other (OES Only)	88
412021	Counter and Rental Clerks	104
353022	Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	100
435021	Couriers and Messengers	108
232091	Court Reporters	90
434031	Court, Municipal, and License Clerks	106
537021	Crane and Tower Operators	126
132041	Credit Analysts	82
434041	Credit Authorizers, Checkers, and Clerks	106

Occ Code	Long Occupational Title	Page of Detailed Trend in Figure 2-11
251111	Criminal Justice and Law Enforcement Teachers, Postsecondary	92
339091	Crossing Guards	100
519021	Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders	122
434051	Customer Service Representatives	106
519031	Cutters and Trimmers, Hand	122
519032	Cutting and Slicing Machine Setters, Operators, and Tenders	122
514031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	118
272031	Dancers	94
439021	Data Entry Keyers	108
151061	Database Administrators	82
419011	Demonstrators and Product Promoters	106
319091	Dental Assistants	98
292021	Dental Hygienists	96
519081	Dental Laboratory Technicians	122
291020	Dentists	96
439031	Desktop Publishers	108
333021	Detectives and Criminal Investigators	100
292032	Diagnostic Medical Sonographers	98
292051	Dietetic Technicians	98
291031	Dietitians and Nutritionists	96
359011	Dining Room and Cafeteria Attendants and Bartender Helpers	102
212021	Directors, Religious Activities and Education	88
359021	Dishwashers	102
435032	Dispatchers, Except Police, Fire, and Ambulance	108
419091	Door-To-Door Sales Workers, News and Street Vendors, and Related Workers	106
173099	Drafters, Engineering, and Mapping Technicians, All Other (OES Only)	86
537031	Dredge Operators	126
514032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic	118
533031	Driver/Sales Workers	124
472081	Drywall and Ceiling Tile Installers	112
475021	Earth Drillers, Except Oil and Gas	112
251063	Economics Teachers, Postsecondary	90
193011	Economists	86
273041	Editors	96
119030	Education Administrators	80
251081	Education Teachers, Postsecondary	92
259099	Education, Training, and Library Workers, All Other	94
211012	Educational, Vocational, and School Counselors	88
492092	Electric Motor, Power Tool, and Related Repairers	114
173023	Electrical and Electronic Engineering Technicians	86
512022	Electrical and Electronic Equipment Assemblers	116
492099	Electrical and Electronic Equipment Mechanics, Installers, and Repairers, All Other (OES Only)	114

Appendix 1: Long Occupational Titles and Page of Detailed Occupational Trend

Occ Code	Long Occupational Title	Page of Detailed Trend in Figure 2-11
173012	Electrical and Electronics Drafters	84
492093	Electrical and Electronics Installers and Repairers, Transportation Equipment	114
492094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	114
492095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	114
172071	Electrical Engineers	84
499051	Electrical Power-Line Installers and Repairers	116
472111	Electricians	112
512023	Electromechanical Equipment Assemblers	116
173024	Electro-Mechanical Technicians	86
492096	Electronic Equipment Installers and Repairers, Motor Vehicles	114
492097	Electronic Home Entertainment Equipment Installers and Repairers	114
172072	Electronics Engineers, Except Computer	84
252021	Elementary School Teachers, Except Special Education	92
474021	Elevator Installers and Repairers	112
434061	Eligibility Interviewers, Government Programs	106
394011	Embalmers	102
131061	Emergency Management Specialists	82
292041	Emergency Medical Technicians and Paramedics	98
131071	Employment, Recruitment, and Placement Specialists	82
512031	Engine and Other Machine Assemblers	116
119041	Engineering Managers	80
251032	Engineering Teachers, Postsecondary	90
173029	Engineering Technicians, Except Drafters, All Other	86
172199	Engineers, All Other	84
251123	English Language and Literature Teachers, Postsecondary	92
272099	Entertainers and Performers, Sports and Related Workers, All Other	94
173025	Environmental Engineering Technicians	86
172081	Environmental Engineers	84
194091	Environmental Science and Protection Technicians, Including Health	88
251053	Environmental Science Teachers, Postsecondary	90
192041	Environmental Scientists and Specialists, Including Health	86
191041	Epidemiologists	86
519194	Etchers and Engravers	122
537032	Excavating and Loading Machine and Dragline Operators	126
436011	Executive Secretaries and Administrative Assistants	108
475031	Explosives Workers, Ordnance Handling Experts, and Blasters	112
475099	Extraction Workers, All Other	112
514021	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic	118
516091	Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers	120
519041	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	122
516092	Fabric and Apparel Patternmakers	120
499093	Fabric Menders, Except Garment	116

Occ Code	Long Occupational Title	Page of Detailed Trend in Figure 2-11
454021	Fallers	110
259021	Farm and Home Management Advisors	94
493041	Farm Equipment Mechanics	114
451012	Farm Labor Contractors	110
119011	Farm, Ranch, and Other Agricultural Managers	80
459099	Farming, Fishing, and Forestry Workers, All Other (OES Only)	110
452092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	110
452093	Farmworkers, Farm and Ranch Animals	110
271022	Fashion Designers	94
474031	Fence Erectors	112
512091	Fiberglass Laminators and Fabricators	116
434071	File Clerks	106
274032	Film and Video Editors	96
132051	Financial Analysts	82
132061	Financial Examiners	82
113031	Financial Managers	80
132099	Financial Specialists, All Other	82
434999	Financial, Information, and Record Clerks, All Other (OES Only)	108
271013	Fine Artists, Including Painters, Sculptors, and Illustrators	94
332011	Fire Fighters	100
332020	Fire Inspectors and Investigators	100
471011	First-Line Supervisors/Managers of Construction Trades and Extraction Workers	110
331011	First-Line Supervisors/Managers of Correctional Officers	100
451011	First-Line Supervisors/Managers of Farming, Fishing, and Forestry Workers	110
331021	First-Line Supervisors/Managers of Fire Fighting and Prevention Workers	100
351012	First-Line Supervisors/Managers of Food Preparation and Serving Workers	100
531021	First-Line Supervisors/Managers of Helpers, Laborers, and Material Movers, Hand	124
371011	First-Line Supervisors/Managers of Housekeeping and Janitorial Workers	102
371012	First-Line Supervisors/Managers of Landscaping, Lawn Service, and Groundskeeping Workers	102
491011	First-Line Supervisors/Managers of Mechanics, Installers, and Repairers	114
411012	First-Line Supervisors/Managers of Non-Retail Sales Workers	104
431011	First-Line Supervisors/Managers of Office and Administrative Support Workers	106
391021	First-Line Supervisors/Managers of Personal Service Workers	102
331012	First-Line Supervisors/Managers of Police and Detectives	100
511011	First-Line Supervisors/Managers of Production and Operating Workers	116
411011	First-Line Supervisors/Managers of Retail Sales Workers	104
531031	First-Line Supervisors/Managers of Transportation and Material-Moving Machine and Vehicle Operators	124
331099	First-Line Supervisors/Managers, Protective Service Workers, All Other	100
333031	Fish and Game Wardens	100
399031	Fitness Trainers and Aerobics Instructors	104
396031	Flight Attendants	104
472042	Floor Layers, Except Carpet, Wood, and Hard Tiles	110

Appendix 1: Long Occupational Titles and Page of Detailed Occupational Trend

Occ Code	Long Occupational Title	Page of Detailed Trend in Figure 2-11
472043	Floor Sanders and Finishers	110
271023	Floral Designers	94
513091	Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders	118
513092	Food Batchmakers	118
513093	Food Cooking Machine Operators and Tenders	118
359099	Food Preparation and Serving Related Workers, All Other	102
352021	Food Preparation Workers	100
513099	Food Processing Workers, All Other (OES Only)	118
353041	Food Servers, Nonrestaurant	102
119051	Food Service Managers	80
251124	Foreign Language and Literature Teachers, Postsecondary	92
194092	Forensic Science Technicians	88
194093	Forest and Conservation Technicians	88
454011	Forest and Conservation Workers	110
191032	Foresters	86
251043	Forestry and Conservation Science Teachers, Postsecondary	90
514022	Forging Machine Setters, Operators, and Tenders, Metal and Plastic	118
514071	Foundry Mold and Coremakers	118
394021	Funeral Attendants	102
119061	Funeral Directors	80
519051	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	122
517021	Furniture Finishers	120
433041	Gaming Cage Workers	106
412012	Gaming Change Persons and Booth Cashiers	104
119071	Gaming Managers	80
393010	Gaming Services Workers	102
537071	Gas Compressor and Gas Pumping Station Operators	126
518092	Gas Plant Operators	122
111021	General and Operations Managers	80
193092	Geographers	88
251064	Geography Teachers, Postsecondary	90
194041	Geological and Petroleum Technicians	88
192042	Geoscientists, Except Hydrologists and Geographers	86
472121	Glaziers	112
452041	Graders and Sorters, Agricultural Products	110
251191	Graduate Teaching Assistants	92
271024	Graphic Designers	94
519022	Grinding and Polishing Workers, Hand	122
514033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	118
395012	Hairdressers, Hairstylists, and Cosmetologists	104
474041	Hazardous Materials Removal Workers	112
172111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	84

Occ Code	Long Occupational Title	Page of Detailed Trend in Figure 2-11
291199	Health Diagnosing and Treating Practitioners, All Other	96
211091	Health Educators	88
251071	Health Specialties Teachers, Postsecondary	90
299099	Healthcare Practitioners and Technical Workers, All Other	98
319099	Healthcare Support Workers, All Other	98
514191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic	118
499021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	114
473019	Helpers, Construction Trades, All Other	112
473011	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	112
473012	Helpers--Carpenters	112
473013	Helpers--Electricians	112
475081	Helpers--Extraction Workers	112
499098	Helpers--Installation, Maintenance, and Repair Workers	116
473014	Helpers--Painters, Paperhangers, Plasterers, and Stucco Masons	112
473015	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	112
519198	Helpers--Production Workers	124
473016	Helpers--Roofers	112
474051	Highway Maintenance Workers	112
193093	Historians	88
251125	History Teachers, Postsecondary	92
537041	Hoist and Winch Operators	126
499031	Home Appliance Repairers	114
251192	Home Economics Teachers, Postsecondary	92
311011	Home Health Aides	98
359031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	102
434081	Hotel, Motel, and Resort Desk Clerks	106
372102	Housekeepers And Butlers, Private Household	102
434161	Human Resources Assistants, Except Payroll and Timekeeping	108
113040	Human Resources Managers	80
192043	Hydrologists	86
173026	Industrial Engineering Technicians	86
172112	Industrial Engineers	84
499041	Industrial Machinery Mechanics	116
113051	Industrial Production Managers	80
537051	Industrial Truck and Tractor Operators	126
193032	Industrial-Organizational Psychologists	88
434199	Information and Record Clerks, All Other	108
519061	Inspectors, Testers, Sorters, Samplers, and Weighers	122
499099	Installation, Maintenance, and Repair Workers, All Other	116
259031	Instructional Coordinators	94
472130	Insulation Workers	112
131032	Insurance Appraisers, Auto Damage	82

Appendix 1: Long Occupational Titles and Page of Detailed Occupational Trend

Occ Code	Long Occupational Title	Page of Detailed Trend in Figure 2-11
439041	Insurance Claims and Policy Processing Clerks	108
413021	Insurance Sales Agents	106
132053	Insurance Underwriters	82
271025	Interior Designers	94
273091	Interpreters and Translators	96
434111	Interviewers, Except Eligibility and Loan	108
372011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	102
519071	Jewelers and Precious Stone and Metal Workers	122
515021	Job Printers	120
231023	Judges, Magistrate Judges, and Magistrates	90
252012	Kindergarten Teachers, Except Special Education	92
537062	Laborers and Freight, Stock, and Material Movers, Hand	126
171012	Landscape Architects	84
373011	Landscaping and Groundskeeping Workers	102
514034	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	118
516011	Laundry and Dry-Cleaning Workers	120
232092	Law Clerks	90
251112	Law Teachers, Postsecondary	92
231011	Lawyers	90
514192	Lay-Out Workers, Metal and Plastic	118
239099	Legal and Related Workers, All Other (OES Only)	90
436012	Legal Secretaries	108
232099	Legal Support Workers, All Other	90
111031	Legislators	80
254021	Librarians	92
434121	Library Assistants, Clerical	108
251082	Library Science Teachers, Postsecondary	92
254031	Library Technicians	92
259199	Library, Museum, Training, and Other Education Workers, All Other (OES Only)	94
292061	Licensed Practical and Licensed Vocational Nurses	98
191099	Life Scientists, All Other	86
194099	Life, Physical, and Social Science Technicians, All Other	88
339092	Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers	100
537033	Loading Machine Operators, Underground Mining	126
132071	Loan Counselors	82
434131	Loan Interviewers and Clerks	108
132072	Loan Officers	82
393093	Locker Room, Coatroom, and Dressing Room Attendants	102
499094	Locksmiths and Safe Repairers	116
534011	Locomotive Engineers	124
534012	Locomotive Firers	124
119081	Lodging Managers	80

Occ Code	Long Occupational Title	Page of Detailed Trend in Figure 2-11
454023	Log Graders and Scalers	110
454022	Logging Equipment Operators	110
537063	Machine Feeders and Offbearers	126
514041	Machinists	118
372012	Maids and Housekeeping Cleaners	102
439051	Mail Clerks and Mail Machine Operators, Except Postal Service	108
499042	Maintenance and Repair Workers, General	116
499043	Maintenance Workers, Machinery	116
395091	Makeup Artists, Theatrical and Performance	104
131111	Management Analysts	82
119199	Managers, All Other	80
395092	Manicurists and Pedicurists	104
499095	Manufactured Building and Mobile Home Installers	116
172121	Marine Engineers and Naval Architects	84
193021	Market Research Analysts	86
112021	Marketing Managers	80
211013	Marriage and Family Therapists	88
319011	Massage Therapists	98
537199	Material Moving Workers, All Other	126
435199	Material Recording, Scheduling, Dispatching, and Distributing Workers, All Other (OES Only)	108
172131	Materials Engineers	84
192032	Materials Scientists	86
152099	Mathematical Science Occupations, All Other	84
251022	Mathematical Science Teachers, Postsecondary	90
152091	Mathematical Technicians	84
152021	Mathematicians	84
513022	Meat, Poultry, and Fish Cutters and Trimmers	118
499011	Mechanical Door Repairers	114
173013	Mechanical Drafters	84
173027	Mechanical Engineering Technicians	86
172141	Mechanical Engineers	84
274099	Media and Communication Equipment Workers, All Other	96
273099	Media and Communication Workers, All Other	96
292012	Medical and Clinical Laboratory Technicians	96
292011	Medical and Clinical Laboratory Technologists	96
119111	Medical and Health Services Managers	80
211022	Medical and Public Health Social Workers	88
519082	Medical Appliance Technicians	122
319092	Medical Assistants	98
319093	Medical Equipment Preparers	98
499062	Medical Equipment Repairers	116
292071	Medical Records and Health Information Technicians	98

Appendix 1: Long Occupational Titles and Page of Detailed Occupational Trend

Occ Code	Long Occupational Title	Page of Detailed Trend in Figure 2-11
191042	Medical Scientists, Except Epidemiologists	86
436013	Medical Secretaries	108
319094	Medical Transcriptionists	98
131121	Meeting and Convention Planners	82
211023	Mental Health and Substance Abuse Social Workers	88
211014	Mental Health Counselors	88
271026	Merchandise Displayers and Window Trimmers	94
514199	Metal Workers and Plastic Workers, All Other	118
514051	Metal-Refining Furnace Operators and Tenders	118
435041	Meter Readers, Utilities	108
191022	Microbiologists	86
252022	Middle School Teachers, Except Special and Vocational Education	92
514035	Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic	118
499044	Millwrights	116
172151	Mining and Geological Engineers, Including Mining Safety Engineers	84
475040	Mining Machine Operators	112
519023	Mixing and Blending Machine Setters, Operators, and Tenders	122
493042	Mobile Heavy Equipment Mechanics, Except Engines	114
514061	Model Makers, Metal and Plastic	118
517031	Model Makers, Wood	120
419012	Models	106
519195	Molders, Shapers, and Casters, Except Metal and Plastic	122
514072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	118
393021	Motion Picture Projectionists	102
533099	Motor Vehicle Operators, All Other	124
493051	Motorboat Mechanics	114
535022	Motorboat Operators	124
493052	Motorcycle Mechanics	114
271014	Multi-Media Artists and Animators	94
514081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	118
272041	Music Directors and Composers	94
499063	Musical Instrument Repairers and Tuners	116
272042	Musicians and Singers	94
119121	Natural Sciences Managers	80
151071	Network and Computer Systems Administrators	82
151081	Network Systems and Data Communications Analysts	82
434141	New Accounts Clerks	108
273020	News Analysts, Reporters and Correspondents	94
392021	Nonfarm Animal Caretakers	102
172161	Nuclear Engineers	84
292033	Nuclear Medicine Technologists	98
194051	Nuclear Technicians	88

Occ Code	Long Occupational Title	Page of Detailed Trend in Figure 2-11
514012	Numerical Tool and Process Control Programmers	118
311012	Nursing Aides, Orderlies, and Attendants	98
251072	Nursing Instructors and Teachers, Postsecondary	90
299010	Occupational Health and Safety Specialists and Technicians	98
312012	Occupational Therapist Aides	98
312011	Occupational Therapist Assistants	98
291122	Occupational Therapists	96
439199	Office and Administrative Support Workers, All Other	110
439061	Office Clerks, General	108
439071	Office Machine Operators, Except Computer	108
472073	Operating Engineers and Other Construction Equipment Operators	110
152031	Operations Research Analysts	84
519083	Ophthalmic Laboratory Technicians	122
292081	Opticians, Dispensing	98
291041	Optometrists	96
434151	Order Clerks	108
292091	Orthotists and Prosthetists	98
493053	Outdoor Power Equipment and Other Small Engine Mechanics	114
519111	Packaging and Filling Machine Operators and Tenders	122
537064	Packers and Packagers, Hand	126
472141	Painters, Construction and Maintenance	112
519122	Painters, Transportation Equipment	122
519123	Painting, Coating, and Decorating Workers	122
519196	Paper Goods Machine Setters, Operators, and Tenders	122
472142	Paperhangers	112
232011	Paralegals and Legal Assistants	90
333041	Parking Enforcement Workers	100
536021	Parking Lot Attendants	126
412022	Parts Salespersons	104
514062	Patternmakers, Metal and Plastic	118
517032	Patternmakers, Wood	120
472071	Paving, Surfacing, and Tamping Equipment Operators	110
433051	Payroll and Timekeeping Clerks	106
399021	Personal and Home Care Aides	104
399099	Personal Care and Service Workers, All Other	104
132052	Personal Financial Advisors	82
372021	Pest Control Workers	102
373012	Pesticide Handlers, Sprayers, and Applicators, Vegetation	102
172171	Petroleum Engineers	84
518093	Petroleum Pump System Operators, Refinery Operators, and Gaugers	122
291051	Pharmacists	96
319095	Pharmacy Aides	98

Appendix 1: Long Occupational Titles and Page of Detailed Occupational Trend

Occ Code	Long Occupational Title	Page of Detailed Trend in Figure 2-11
292052	Pharmacy Technicians	98
251126	Philosophy and Religion Teachers, Postsecondary	92
274021	Photographers	96
519131	Photographic Process Workers	122
519132	Photographic Processing Machine Operators	122
192099	Physical Scientists, All Other	86
312022	Physical Therapist Aides	98
312021	Physical Therapist Assistants	98
291123	Physical Therapists	96
291071	Physician Assistants	96
291060	Physicians and Surgeons	96
192012	Physicists	86
251054	Physics Teachers, Postsecondary	90
472072	Pile-Driver Operators	110
472151	Pipelayers	112
518099	Plant and System Operators, All Other	122
472161	Plasterers and Stucco Masons	112
514193	Plating and Coating Machine Setters, Operators, and Tenders, Metal and Plastic	118
472152	Plumbers, Pipefitters, and Steamfitters	112
291081	Podiatrists	96
333051	Police and Sheriff's Patrol Officers	100
435031	Police, Fire, and Ambulance Dispatchers	108
251065	Political Science Teachers, Postsecondary	90
193094	Political Scientists	88
435051	Postal Service Clerks	108
435052	Postal Service Mail Carriers	108
435053	Postal Service Mail Sorters, Processors, and Processing Machine Operators	108
119131	Postmasters and Mail Superintendents	80
251199	Postsecondary Teachers, All Other	92
514052	Pourers and Casters, Metal	118
518010	Power Plant Operators, Distributors, and Dispatchers	122
499069	Precision Instrument and Equipment Repairers, All Other	116
515022	Prepress Technicians and Workers	120
252011	Preschool Teachers, Except Special Education	92
516021	Pressers, Textile, Garment, and Related Materials	120
515023	Printing Machine Operators	120
515099	Printing Workers, All Other (OES Only)	120
339021	Private Detectives and Investigators	100
211092	Probation Officers and Correctional Treatment Specialists	88
433061	Procurement Clerks	106
272012	Producers and Directors	94
519199	Production Workers, All Other	124

Occ Code	Long Occupational Title	Page of Detailed Trend in Figure 2-11
435061	Production, Planning, and Expediting Clerks	108
439081	Proofreaders and Copy Markers	108
119141	Property, Real Estate, and Community Association Managers	80
339099	Protective Service Workers, All Other	100
311013	Psychiatric Aides	98
292053	Psychiatric Technicians	98
251066	Psychology Teachers, Postsecondary	90
112031	Public Relations Managers	80
273031	Public Relations Specialists	94
537072	Pump Operators, Except Wellhead Pumpers	126
131021	Purchasing Agents and Buyers, Farm Products	80
131023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	80
113061	Purchasing Managers	80
291124	Radiation Therapists	96
492021	Radio Mechanics	114
292034	Radiologic Technologists and Technicians	98
493043	Rail Car Repairers	114
534099	Rail Transportation Workers, All Other	124
534013	Rail Yard Engineers, Dinkey Operators, and Hostlers	124
534021	Railroad Brake, Signal, and Switch Operators	124
534031	Railroad Conductors and Yardmasters	124
474061	Rail-Track Laying and Maintenance Equipment Operators	112
419021	Real Estate Brokers	106
419022	Real Estate Sales Agents	106
434171	Receptionists and Information Clerks	108
251193	Recreation and Fitness Studies Teachers, Postsecondary	92
399032	Recreation Workers	104
291125	Recreational Therapists	96
493092	Recreational Vehicle Service Technicians	114
499045	Refractory Materials Repairers, Except Brickmasons	116
537081	Refuse and Recyclable Material Collectors	126
291111	Registered Nurses	96
211015	Rehabilitation Counselors	88
472171	Reinforcing Iron and Rebar Workers	112
434181	Reservation and Transportation Ticket Agents and Travel Clerks	108
399041	Residential Advisors	104
291126	Respiratory Therapists	96
292054	Respiratory Therapy Technicians	98
412031	Retail Salespersons	104
499096	Riggers	116
475051	Rock Splitters, Quarry	112
514023	Rolling Machine Setters, Operators, and Tenders, Metal and Plastic	118

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Occ Code	Long Occupational Title	Page of Detailed Trend in Figure 2-11
472181	Roofers	112
535011	Sailors and Marine Oilers	124
419099	Sales and Related Workers, All Other	106
419031	Sales Engineers	106
112022	Sales Managers	80
414012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	106
414011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	106
517041	Sawing Machine Setters, Operators, and Tenders, Wood	120
252031	Secondary School Teachers, Except Special and Vocational Education	92
439999	Secretaries, Administrative Assistants, and Other Office Support Workers, All Other (OES Only)	110
436014	Secretaries, Except Legal, Medical, and Executive	108
413031	Securities, Commodities, and Financial Services Sales Agents	106
492098	Security and Fire Alarm Systems Installers	114
339030	Security Guards and Gaming Surveillance Officers	100
474091	Segmental Pavers	112
253021	Self-Enrichment Education Teachers	92
519141	Semiconductor Processors	122
519012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	122
474071	Septic Tank Servicers and Sewer Pipe Cleaners	112
536031	Service Station Attendants	126
475013	Service Unit Operators, Oil, Gas, and Mining	112
271027	Set and Exhibit Designers	94
516051	Sewers, Hand	120
516031	Sewing Machine Operators	120
395093	Shampooers	104
472211	Sheet Metal Workers	112
535031	Ship Engineers	124
435071	Shipping, Receiving, and Traffic Clerks	108
516041	Shoe and Leather Workers and Repairers	120
516042	Shoe Machine Operators and Tenders	120
537111	Shuttle Car Operators	126
499097	Signal and Track Switch Repairers	116
395094	Skin Care Specialists	104
513023	Slaughterers and Meat Packers	118
119151	Social and Community Service Managers	80
211093	Social and Human Service Assistants	88
193099	Social Scientists and Related Workers, All Other	88
251113	Social Work Teachers, Postsecondary	92
193041	Sociologists	88
251067	Sociology Teachers, Postsecondary	90
274014	Sound Engineering Technicians	96
252042	Special Education Teachers, Middle School	92

Occ Code	Long Occupational Title	Page of Detailed Trend in Figure 2-11
252041	Special Education Teachers, Preschool, Kindergarten, and Elementary School	92
252043	Special Education Teachers, Secondary School	92
291127	Speech-Language Pathologists	96
518021	Stationary Engineers and Boiler Operators	122
439111	Statistical Assistants	110
152041	Statisticians	84
435081	Stock Clerks and Order Fillers	108
472022	Stonemasons	110
472221	Structural Iron and Steel Workers	112
512041	Structural Metal Fabricators and Fitters	116
211011	Substance Abuse and Behavioral Disorder Counselors	88
292055	Surgical Technologists	98
193022	Survey Researchers	86
173031	Surveying and Mapping Technicians	86
171022	Surveyors	84
432011	Switchboard Operators, Including Answering Service	106
516052	Tailors, Dressmakers, and Custom Sewers	120
537121	Tank Car, Truck, and Ship Loaders	126
472082	Tapers	112
132081	Tax Examiners, Collectors, and Revenue Agents	82
132082	Tax Preparers	82
533041	Taxi Drivers and Chauffeurs	124
259041	Teacher Assistants	94
253099	Teachers and Instructors, All Other	92
253999	Teachers, Primary, Secondary, and Adult, All Other (OES Only)	92
512092	Team Assemblers	116
273042	Technical Writers	96
492022	Telecommunications Equipment Installers and Repairers, Except Line Installers	114
499052	Telecommunications Line Installers and Repairers	116
419041	Telemarketers	106
432021	Telephone Operators	106
433071	Tellers	106
516061	Textile Bleaching and Dyeing Machine Operators and Tenders	120
516062	Textile Cutting Machine Setters, Operators, and Tenders	120
516063	Textile Knitting and Weaving Machine Setters, Operators, and Tenders	120
516064	Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders	120
516099	Textile, Apparel, and Furnishings Workers, All Other	120
472044	Tile and Marble Setters	110
512093	Timing Device Assemblers, Adjusters, and Calibrators	116
519197	Tire Builders	124
493093	Tire Repairers and Changers	114
232093	Title Examiners, Abstractors, and Searchers	90

Appendix 1: Long Occupational Titles and Page of Detailed Occupational Trend

Occ Code	Long Occupational Title	Page of Detailed Trend in Figure 2-11
514111	Tool and Die Makers	118
514194	Tool Grinders, Filers, and Sharpeners	118
396021	Tour Guides and Escorts	104
536041	Traffic Technicians	126
131073	Training and Development Specialists	82
333052	Transit and Railroad Police	100
396032	Transportation Attendants, Except Flight Attendants and Baggage Porters	104
536051	Transportation Inspectors	126
536099	Transportation Workers, All Other	126
113071	Transportation, Storage, and Distribution Managers	80
413041	Travel Agents	106
396022	Travel Guides	104
373013	Tree Trimmers and Pruners	102
533032	Truck Drivers, Heavy and Tractor-Trailer	124
533033	Truck Drivers, Light or Delivery Services	124
272023	Umpires, Referees, and Other Sports Officials	94
516093	Upholsterers	120
193051	Urban and Regional Planners	88
393031	Ushers, Lobby Attendants, and Ticket Takers	102
493099	Vehicle and Mobile Equipment Mechanics, Installers, and Repairers, All Other (OES Only)	114
291131	Veterinarians	96
319096	Veterinary Assistants and Laboratory Animal Caretakers	98
292056	Veterinary Technologists and Technicians	98
252023	Vocational Education Teachers, Middle School	92
251194	Vocational Education Teachers, Postsecondary	92
252032	Vocational Education Teachers, Secondary School	92
353031	Waiters and Waitresses	102
499064	Watch Repairers	116
518031	Water and Liquid Waste Treatment Plant and System Operators	122
435111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	108
514121	Welders, Cutters, Solderers, and Brazers	118
514122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	118
131022	Wholesale and Retail Buyers, Except Farm Products	80
517099	Woodworkers, All Other	120
517042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing	120
439022	Word Processors and Typists	108
273043	Writers and Authors	96
191023	Zoologists and Wildlife Biologists	86

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Appendix 2: Additional Resources for Job Seekers and Employers

The Department of Workforce Development offers several resources to employers, employees, and job seekers. Three resources are described below. A detailed listing of resources can be found on the internet at <http://www.dwd.state.wi.us>.

Wisconsin Labor Market Information <http://www.dwd.state.wi.us/lmi>

Comprehensive Wisconsin labor market information can be found on the Department of Workforce Development website. The information includes:

- Long- and short-term industrial and occupational employment projections for Wisconsin. Also, long-term occupational projections are available for the state's eleven Workforce Development Areas.
- Civilian labor force estimates from the Local Area Unemployment Statistics (LAUS) program.
- Unemployment rates from the Local Area Unemployment Statistics (LAUS) program.
- Wage data for occupations from the Occupational Employment Statistics/Wage (OES) program.
- Industry employment data from the Current Employment Statistics (CES 790) and Covered Employment and Wages (CEW or ES-202) programs.
- Affirmative action data.
- Plant closings and mass layoff notices.
- County and Workforce Development Area profiles.

Wisconsin Job Centers Toll Free Telephone Number 1- 888-258-9966

There are currently 79 Job Centers in Wisconsin that provide 'one-stop shopping' for employers to meet their workforce needs and for job seekers to find career planning, job placement and training services needed to get jobs. All Job Centers offer the following core services:

- An automated system of job openings, available on-site or through internet access. Called JobNet, this system records over 60,000 individual job seeker inquiries each month, records over 6 million hits a year, and is responsible for about 150,000 job placements a year statewide.
- The ability for employers to input job listings electronically through an internet connection.
- Assistance with job search skills; testing and assessment for job seekers.
- Information on education and training programs for job seekers.
- Automated links to the unemployment insurance system.

The Wisconsin Job Center Contact Line is a toll-free number employers or job seekers may call to learn the phone number and address of their nearest Wisconsin Job Center. Call toll free 1-888-258-9966.

Wisconsin JobNet <http://www.dwd.state.wi.us/jobnet>

JobNet is Wisconsin's single largest source for job postings. Wisconsin's JobNet is a computerized system that allows employers to post job openings and job seekers to find out about job openings.

Employers can list job openings on JobNet using the Job Order System. Employers with an internet connection can use the JobNet address listed above to directly enter their job orders. Also, employers may call or visit their local Job Center to place their job orders. In the job order, employers can list the specific background, training, and other skills required for the job.

Job seekers can access JobNet through any computer that has internet access. Job seekers can also use JobNet at their local Job Center. Each job listing has information on how to apply for the job.

Wisconsin Projections 2000-2010

Appendix 3: Methodology

Overview

The Projections Unit develops long-term outlooks of employment in Wisconsin's industries and occupations. Employment includes all nonfarm wage and salary employment and nonfarm self-employment. Employment in approximately 70 industries and 750 occupations is examined.

The long-term projections are for ten years out into the future and are updated every two years. Industrial and occupational projections are prepared for Wisconsin as a whole. Occupational projections are also available for the state's eleven workforce development areas.

Long-term projections assist customers in long-range planning. Students, job seekers, counselors, and employers may use the projections to explore expected employment in occupations and industries. Educational institutions may use occupational projections to evaluate degree and/or course offerings. Researchers may use the data in analyses of Wisconsin's labor market.

All projections are subject to the economic, demographic, and social forces occurring at the time the projections are prepared. Anticipated changes in these forces are taken into account when developing the projections, but it is impossible to predict the nature and implications of all changes. It is important to note that unanticipated events may affect the accuracy of the projections.

This program is funded by the U.S. Department of Labor, Employment and Training Administration (ETA).

Data Used

U.S. Census Bureau, Decennial Censuses; U.S. Bureau of Labor Statistics, Current Population Survey (CPS) and Employment Projections; Current Employment Statistics (CES); Covered Employment and Wages (CEW or ES-202); and Occupational Employment Statistics/Wage (OES/Wage).

Methodology

Industrial Employment Projections

Preparing industrial projections involves four steps. First, historical time series of industry employment are developed using data from the Current Employment Statistics (CES) and Covered Employment and Wages (CEW or ES-202) programs.

Several statistical methods and econometric models are then used to develop a set of preliminary projections for each industry. The models for the long-term projections include various shift-share and ordinary least-squares models.

Next, a panel of analysts from business, academia, and government review the historical data and the preliminary projections for approximately 40 industry groups. These groups are based on one- and two-digit SIC codes. The analysts use their knowledge of economic, social, and technological trends to anticipate future scenarios and changes in employment. Each analyst then provides their own projection for each of the 40 industry groups. The analysts' projections are then pooled and the averages are used as the final industrial employment projections for the 40 industry groups.

The fourth step involves using the employment projections from the 40 industry groups to develop industry projections at a more detailed level. The projections from each industry group are dispersed across the two- and three-digit SIC level industries within that group.

The ratios used in the conversion from the larger 40 industry groups to the two- and three-digit levels are based on ratios that come from the national projections prepared by the U.S. Bureau of Labor Statistics. An assumption is made that each Wisconsin detailed industry's growth will be in same proportion to the more aggregate level as the U.S. detailed industry's growth is to the more aggregated U.S. level.

Occupational Employment Projections

Occupational employment projections involving merging data from three sources – the Occupational Employment Statistics/Wage (OES/Wage) survey, the U.S. Bureau of Labor Statistics (BLS) national projections, and the Wisconsin three-digit SIC industrial employment for the base and projected years.

The primary source of the base year occupational data is the OES/Wage survey. The survey used in the most recent round of projections, obtained employment by occupation within each nonfarm wage and salary industry based on three-digit SIC.

The OES/Wage Survey does not obtain a sample of self-employment or unpaid family employment by occupation. As a result, national ratios of self-employment and unpaid family employment to nonfarm wage and salary employment by occupation are obtained from BLS. The BLS ratios are based on data from the Current Population Survey (CPS). The national ratios are applied to Wisconsin OES/Wage data to estimate self-employment and unpaid family workers in Wisconsin.

BLS also provides replacement rates by occupation which are derived from the national CPS. Replacement rates are the expected rate at which job openings will emerge due to people permanently leaving a given occupation. A permanent leave occurs when a person retires, dies, or for some other reason decides to leave the occupation. In addition, BLS provides change factors which are used to estimate shifts in the distribution of employment among occupations, within each industry, over the projection period.

A base year table, called a matrix, of employment by occupation and industry is developed. The matrix is based on occupational and industrial employment for the current base year. The base year matrix is then merged with the projected year industrial employment projections, and the BLS separation rates and change factors. The merger of this information creates the projections of occupational employment by industry.

Wisconsin Projections 2000 - 2010

Employment in Industries and Occupations

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Additional Projections information is also available on the Labor Market Information website at <http://www.dwd.state.wi.us/lmi/projections.htm>.

